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CONTENTS AND SUBJECT INDEX

Focal Infection in Peptic Ulcer. Russell L. Haden, M.D., and Peter T. Bohan, M.D., Kansas City, Kan...409

Two Primary Tumors of the Gasserian Ganglion. Ethel C. Russell, M.D., Philadelphia 413

Observations of the Visualized Gallbladder by Graham Method, with Reference to the Effect of Nonsurgical Biliary Drainage: Preliminary Report. Daniel N. Silverman, M.D., and Leon J. Menville, M.D., New Orleans 416

A New Treatment for Undeveloped Lower Jaw. William T. Coughlin, M.D., St. Louis.....419

Lipoma of the Scalp: Report of Case. George David Cutler, M.D., Boston, Mass. 421

A New Method of Diagnosis in Certain Diseases of the Spinal Cord: Report of Cases. Joshua Rosett, M.D., New York 423

A Specific Precipitin Reaction in Epidemic Poliomyelitis. Edward C. Rosenow, M.D., Rochester, Minn..429

Prevention of Congenital Syphilis by Treating the Mother During Pregnancy. Joseph S. Lawrence, M.D., New York.....432

Barbital (Veronal) Poisoning. William H. Leake, M.D., and E. Richmond Ware, M.D., Los Angeles.....434

A Study of Acute Primary Typhlitis. William A. Brams, M.D., and Karl A. Meyer, M.D., Chicago.....436

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Fracture of the Midthigh: Report of Case. Barclay W. Moffat, M.D., New York 437

SPECIAL ARTICLE

Medical Education and Medical Service. III. The Real Reason for Our Difficulties. William Allen Pusey, M.D., Chicago 437

MEDICAL ECONOMICS

The Physician's Income Tax.....446

EDITORIALS

When a Muscle Contracts.....442

Gallstones and Diet.....443

Endocrinology and the Mammary Gland 443

CURRENT COMMENT

The Reorganization Bill Again.....444

Financial Assistance for Needy Medical Students 445

The Death of Ernest H. Baynes....445

Barbital and Unessential Modifications 445

Diphtheria at Nome.....446

(Subject Index on next page)

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See Page 3

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "T," Therapeutics; "MI," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics.

Abdomen, diagnosis of disease in....ab-477
Abortion, criminal, tetanus follows....ab-470
Acacia in experimental exsanguination...ab-475
Alcoholism, drunkenness tests....455
Anemia, cerebral, effect on blood pressure ab-473
pernicious, cancer in....ab-477
pernicious vs. hemolytic jaundice....ab-478
Anesthesia, paravertebral, in diagnosis of abdominal disease....ab-477
Aneurysm, arteriovenous....ab-467
Angina pectoris, cervical sympathectomy for....ab-469
Anomaly, rare....ab-467
Aortitis, abdominal....ab-476
auscultation in....ab-479
Appendicitis, acute, in infant....ab-468
leukocyte count in....ab-468
roentgen-ray diagnosis of....457
Army officers, physical defects in....454
Arthritis, gonococcus, in new-born....ab-479
Autolysis, microbian, acid production in..ab-475
Bacillus, proteus X_{19} agglutination....ab-479
Bacteriophage, filtration, and secondary cultures....ab-475
Barbital (veronal) poisoning....*434
and barbital compounds....465
and unessential modifications....E-445
Bartholinitis, zinc chlorid in....ab-474
Baynes, Ernest H., death of....E-445
Bile pigment, formation, from hemoglobin, ...ab-469
Biliary tract disease....ab-469
Bladder, acute cystopyelitis....ab-477
Blood, anastomotic circulation....ab-469
chemistry in asthma and hay-fever....ab-470
pressure, effect of cerebral anemia on..ab-473
pressure, high, and diabetes....ab-478
sugar, determination of....ab-470
urea, determination of....ab-470
Book Notices....464
Books Received....Adv. page 28
Brain centers, localization....ab-475
hemorrhage, in new-born....ab-468
iron deposits in paralysis....ab-472
Bronchiectasis, factors in....ab-474
Cancer, bacteriologic study in....ab-478
arsenic, as occupational disease....ab-472
Cancer Society in Buenos Aires....456
in pernicious anemia....ab-477
inorganic constitutents of blood serum in ab-469
Carbon monoxid in spleen....ab-473
Cholera vibrio, cultivation from feces....ab-472
Chondroma of lung....ab-469
Coccyx, congenital tumors of....ab-467
Complement, nature of....ab-477
Conjunctivitis in swimmers....457
Corpus striatum, functioning, in infants..ab-476
Correspondence....462
Crime, entrapment of physician....MI-466
Deaths....458
Diabetes Mellitus, and hypertension....ab-478
hirsutism associated with....ab-474
Diet and gallstones....E-443
Diphtheria toxoid as immunizing agent...ab-467
at Nome....E-446
Dyspepsia, flatulent....ab-479
Embolism, fat, in brain....ab-478
Encephalitis of rabbits....ab-478
epidemic, eclampsia type of....ab-476
Endocrine relations between mother and child....ab-477
Endocrinology and mammary gland....E-443
Epidemics in Basel....ab-476
Erysipelas, injection of cow's milk in....ab-468
Erythrocytes, basophilic stippling....ab-477
from splenic vein....ab-477
Femur, fracture of midthigh....*437
fractures of shaft of....ab-467
Fetus, injury from preventive roentgen exposures....ab-478
Foreign Letters....455
Fossil man, recent discoveries of....454
Fracture, plaster of Paris in treatment of..ab-469
Frambesia, bismuth subgallate in....457
Gallbladder, calculi, cause of....ab-480
calculi, and diet....E-443
calculus, treatment....ab-476
disease, in children....ab-479
excision and gastric secretion....ab-475
nonsurgical biliary drainage and roentgenography....*416
pseudocholelithiasis....ab-480
visualized by Graham method....*416
Gasserian ganglion, primary tumors of....*413
Genito-urinary tuberculosis, heliotherapy in C-462
Glioma of optic nerve....ab-473
Goiter, heredity in....ab-479
intrathoracic....ab-480
survey of, in Buenos Aires....456
toxic, radiotherapy of....ab-477
Government Services....454
Harrison Narcotic Act, entrapment of physician....MI-466
Health, Public Health Service bill again..E-444
Heart, esophageal registration....ab-480
Heliotherapy, natural vs. artificial....ab-476
in genito-urinary tuberculosis....C-462
Heredity and bones....ab-476
Hirsutism associated with diabetes....ab-474
Hydramnios, acute, and triplets....ab-467
Hydrocephalus in successive pregnancies..ab-476
Hypotonia, Livierato's heart test for....ab-475
Industrial disease, arsenic cancer as....ab-472
Infants, new-born, cerebral hemorrhage in ab-468
mortality, variations in....463
Infection, focal, in peptic ulcer....*409
Insanity, Royal Commission on....455
Insulin, action of....ab-473, ab-480
action of rays on....ab-477
antagonism, and pituitary....ab-477
effect on blood volume....ab-473
inhalation of....ab-477
perlingual use of....ab-477
value to obstetrician....ab-467
Insurance; national medical service....456
Intestines, anastomosis, technic for....ab-468
resection of small intestine....463
Jaundice, hemolytic, vs. anemia....ab-478
polyneuritis after....ab-479
Jaw, undeveloped, treatment for....*419
Kidney, calculi, deep percussion in....ab-476
flow, glomerular control of....ab-473
transplantation of....ab-475
Labor, hour of onset of....ab-476
League of Nations Health Committee....453
Leprosy, Wassermann test in....ab-475
Leukemia, radiotherapy of....ab-469
Leukocyte count in appendicitis....ab-468
Lipase, quinin-fast, in blood, and liver diseases....ab-478
Lipoma of scalp....*421
Lister's microscope....454
Liver diseases, diagnosis....ab-478
insufficiency, in children....ab-476
Llamas, transmission of syphilis to....456
Lung, chondroma of....ab-469
Lymphogranuloma, benign....ab-472
radiotherapy of....ab-469
Magnesium sulphate, synergism of....ab-469
Mammary gland and endocrinology....E-443
Marriages....458
Maternal mortality, variations in....463
Medical attendance, cost of prospective not recoverable by parent (N. Y.)....MI-466
Medical Economics....446
Medical education; reason for our difficulties....*437
Medical Education, Registration....463
Medical service, national....456
Medicolegal....466
Meetings, Coming Meetings....454, 466
Mental defectives....457
Mercurochrome, effect on kidneys....ab-469
Milk, quantity, and sterilization of cattle food....456
Morphin, synergism of....ab-469
Muscle, when a muscle contracts....E-442
Myoclonus, tetantic....*423
National Board of Medical Examiners....463
Nerve, optic, primary tumor of....ab-473
Neuritis, polyneuritis after jaundice....ab-479
polyneuritis succeeding pneumothorax..ab-474
News....448
Nose, vaccination by....ab-474
Osler Memorial Volume....453
Osteoblastic tissue, degeneration....ab-477
Paget's disease....ab-475
Paralysis agitans, iron deposits in brain in ab-472
general paralysis....457
Pathology, comparative, at Zoological Gardens....455
Penis, carcinoma of....ab-471
Peptic ulcer, bacteriologic study in....ab-478
focal infection in....*409
multiple ulcers of duodenum....ab-479
Percussion, deep, in nephrolithiasis....ab-476
Peroxydases and serum....ab-474
Pharmaceutic specialties....456
Physicians, supply; reason for our difficulties....*437
Pituitary colloid, passage into brain....ab-475
antagonism of insulin and....ab-477
Plaster of Paris in treatment of fracture ab-469
Pneumothorax, polyneuritis succeeding..ab-474
Poliomyelitis, precipitin reaction in....*429
Polydermatomyositis, chronic relapsing...ab-472
Pregnancy and prevention of congenital syphilis....*432
carbohydrate metabolism in....ab-467
duration, and development of child...ab-479
extra-uterine....ab-480
tubal, uterine bleeding in....ab-467
Propaganda for Reform....480
Proprietaries not to be sold outside pharmacies....454
Prostate, cancer, radium for....ab-468
Protein therapy, parenteral....ab-479
Queries and Minor Notes....463
Reflexes, vasomotor, plethysmographic study of....ab-478
Respiratory diseases, mortality, influence of weather on....ab-472
Roentgen-ray, preventive exposure, fetus injury from....ab-478
Saliva test for uremia....ab-475
Scalp, lipoma of....*421
Scarlet fever, Dick test....ab-474
Dick test in yellow races....ab-475
in the Netherlands....457
Seminal passages, surgery of....ab-477
Sex, differentiating, chemical test for....ab-478
Shock, surgical....ab-480
Skin, sensitization, localization of....ab-475
Society Proceedings....468
Spinal cord diseases, diagnosis in....*423
Spine, syphilitic spondylitis....ab-480
Spleen, carbon monoxid in....ab-473
erythrocytes from splenic vein....ab-477
significance of....ab-471
State Board Examinations....463
Stomach secretion and cholecystectomy..ab-475
Students, needy, financial assistance for..E-445
Surgery, prevention of gas pains after...ab-467
Swimmers, conjunctivitis in....457
Sympathectomy, prize for research on....454
Syphilis, congenital, prevention, and pregnancy....*432
alleged transmission of, to llamas....456
recurrences, under bismuth treatment..ab-474
Taxation, physician's income tax....446, 463
Testis, transplantation of....ab-477
Tetanus from criminal abortion....ab-470
Thalamus, functioning, in infants....ab-476
Thermometer bill passes Senate....454
Thorax, extraperitoneal intrapleural approach to....ab-468
Thyroid, cancer of....ab-478
Tonics and Sedatives....Adv. page 22
Triplets and acute hydramnios....ab-467
Tuberculosis, blood pressure in....ab-480
immunity....ab-479
in Scandinavians....C-462
pulmonary, developmental diagnosis in..ab-479
pulmonary, phrenicotomy in cavity....ab-474
reinfection, in rabbits....ab-475
serodiagnosis of....ab-480
susceptibility to....ab-473
treatment, Mollgaard....ab-480
Tuberculosis Institute in Buenos Aires....456
Typhlitis, acute primary....*436
Typhoid, cod liver oil in....ab-472
bacillus, brilliant green for study of...ab-470
Typhus, immunization against....ab-475
Ultraviolet rays, action on insulin....ab-477
Uremia, saliva test for....ab-475
Uterus, herpes in....ab-474
Vaccination by nose....ab-474
intradermal vaccination....C-462
Venereal diseases, auto-inoculation for study of....ab-474
Wassermann test in leprosy and syphilis..ab-475
Wassermann-fast blood....ab-471
Weather, effect on respiratory disease mortality....ab-472
Xanthochromia, skin....ab-476
Xanthoma, diabetic....ab-480

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FOCAL INFECTION IN PEPTIC ULCER *

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AND
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The etiology of peptic ulcer is an undetermined question. It is agreed that the fundamental change is a localized impairment of nutrition of the mucosa of the stomach or duodenum with subsequent digestion of the damaged tissue. There is no agreement, however, as to what causes the initial injury. The corrosion, mechanical, nerve, thrombosis and embolism, and bacterial theories each have their exponents. That hemorrhage, lesion and ulceration of the gastric and duodenal mucosa may be produced by a large number of agents has been long recognized. Hemorrhage and ulcer of the duodenum occur frequently after severe body burns. Here the damage is due to the action of toxic products formed in the destruction of protein by heat. Similar lesions may occur in animals on the removal of the suprarenals. Industrial poisons, as benzene (benzol, C_6H_6), may also cause lesions in this location.

The recognized methods for the production of ulcer experimentally by such agents are, however, far removed from clinical work and hence can play little, if any, part in the causation of ulcer in man. Many clinicians emphasize the varied etiologic factors in peptic ulcer. Smithies,[1] for instance, divides duodenal ulcer into ten groups from the standpoint of etiology.

The infectious origin of ulcer has been championed by some observers for many years. This view was based on the well known association of ulcer with pyemia, from various causes, and the finding of bacteria in the ulcers by earlier observers. Bolton [2] raised the question "whether many cases of simple acute ulcer owe their origin to some local septic focus which is so commonly unrecognized or unheeded." There is the greatest difference of opinion, however, as to the importance of infection in ulcer. Einhorn [3] gives infection scant mention in discussing the etiology of duodenal ulcer. Bevan [4] thinks that hematogenous septic infarcts may play a rôle in peptic ulcer but are not the common cause. Eusterman [5] states that infection is the only tenable theory of the causation of ulcer at this stage of medical progress. The evidence for the infection theory of ulcer has been thus summarized by Eusterman:

> The seasonal incidence of exacerbations or onset of a primary attack of peptic ulcer occurs during the months when tonsillitis, sinusitis and respiratory affections are most prevalent. Fatigue, chill, exposure and so forth are predisposing factors, when the resistance of the host is temporarily lowered. Symptoms of ulcer sometimes first become manifest within several weeks or months after devitalization of teeth. Exacerbations of the ulcer are coincident with extraction of infected teeth or tonsils, or with exacerbation of infections in these structures themselves. The epidemics of influenza have been followed by a marked increase in inflammatory lesions of the digestive tract, including the biliary apparatus, pancreas and appendix, or by an aggravation of symptoms in organs involved prior to the epidemic. This may be explained by factors inherent to this infection, or more probably by the influence of existing foci, due to the coincident lowered resistance of the individual. The radical removal of all possible foci has repeatedly caused subsidence of gastro-intestinal disturbances, and evidence of increased healing of an otherwise refractory ulcer. Persistent gastric malfunction without demonstrable local lesions has ceased after removal of septic or abscessed tonsils, or devitalized teeth with periapical disease, or after drainage and treatment of a suppurating sinus. Suppurative gingivitis, the result of extensive pyorrhea, provokes an infectious gastritis, and if not taken care of in time, may result in permanent damage to the gastric glandular tissues. On the other hand, infection that is sealed in and under tension undoubtedly produces embolic focal lesions of the digestive tract through the blood stream.

The experimental data concerning the relation of infection to peptic ulcer we owe entirely to Rosenow and his co-workers. In 1913, Rosenow [6] showed that the intravenous injection of streptococci may be followed by ulcer of the stomach and duodenum. Later,[7] he demonstrated that streptococci are commonly found in ulcer of the stomach in man, and that the streptococci isolated from the ulcer as well as those from foci of infection in patients having ulcer reproduce, when injected into animals, ulcers of the stomach and duodenum resembling those of man. From peptic ulcers in domestic animals a streptococcus has been isolated which will produce similar lesions in rabbits.[8] Rosenow [9] finds also that the streptococcus of ulcer produces a poison within its substance and free in broth cultures which injures selectively the mucous membrane of the stomach. Immunization experiments indicate that the streptococci of ulcer are closely related and probably specific for this disease. It is a point of great interest that the streptococcus of ulcer, if kept under anaerobic

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1. Smithies, Frank: Significance of Etiologic Factors in Treatment of Peptic Ulcer, J. A. M. A. **74**: 1555 (June 5) 1920.
2. Bolton, C.: Ulcer of Stomach, London, Arnold, 1913, p. 59, quoted by Rosenow.
3. Einhorn, Max: Nelson Loose Leaf Medicine.
4. Bevan, A. D.: Relative Value of Surgical and Medical Treatment of Gastric and Duodenal Ulcer, J. A. M. A. **79**: 22 (July 1) 1921.
5. Eusterman, G. B.: Recurrent Ulcer of Stomach and Duodenum: Clinical Notes on Incidence, Diagnosis and Etiology, Minnesota Med. **6**: 698 (Dec.) 1923.
6. Rosenow, E. C.: The Production of Ulcer of the Stomach by Injection of Streptococci, J. A. M. A. **61**: 1947 (Nov. 29) 1913.
7. Rosenow, E. C.: J. Infect. Dis. **19**: 333 (Sept.) 1916.
8. Rosenow, E. C.: J. Infect. Dis. **32**: 384 (May) 1923.
9. Rosenow, E. C.: J. Infect. Dis. **33**: 248 (Sept.) 1923.

conditions, will maintain specific affinity and localizing power for as long as eight and one-half years.

Certainly, the best proof we have of the causal relation of an organism to a disease is the reproduction in animals of the lesions by the suspected organism. This ability to reproduce specific lesions depends on several factors. Rosenow, in many experiments, has fully demonstrated a tendency of bacteria to reproduce in animals the lesion from which the patient suffers. As confirmation of this theory, one of us has produced evidence of such a selective localization in diseases of the eye,[10] in pyelonephritis[11] and in multiple onychia.[12]

Fig. 1 (Case 1).—Duodenum of rabbit showing hemorrhage limited to the bulb; this was produced by the intravenous injection of mixed cultures.

We report here the data from a series of cases in which we have attempted to produce evidence of a causal relationship of focal infection to gastroduodenal lesions. Seventeen cases of undoubted clinical gastric or duodenal ulcer have been studied. In twelve patients, dental infection was most probably at least one focus of infection. In five patients, the tonsils were incriminated. Forty-five rabbits were injected with bacteria from infection in dental areas. Of these, 53 per cent. showed at necropsy lesions of the stomach or duodenum. During the period covered by these experiments, 535 other rabbits were injected intravenously with cultures from dental infection in patients not known to be suffering from gastric or duodenal ulcer. Of these, only 7 per cent. showed gastric or duodenal lesions. This series has been reported elsewhere from the standpoint of elective localization. Eleven rabbits have been injected with cultures from the tonsils of five patients suffering from gastric or duodenal ulcer. Of these, ten showed specific lesions. The organisms injected were streptococci either in pure culture or mixed with staphylococci. Usually the tonsil culture showed a mixture of organisms.

The case histories of three patients, with animal protocols in which the peptic lesion was seemingly due to dental infection, and three in which the tonsils were the source of the infection, are reported in detail below.

REPORT OF CASES

CASE 1.—H. A. A., a business man, aged 44, had several gastric hemorrhages in December, 1922. For six months previous to this he had had indigestion, consisting principally of a feeling of fulness after eating. A diagnosis of duodenal ulcer was made. Several teeth were extracted at this time. There were no further hemorrhages and the symptoms were largely relieved, although the patient states that he still has indigestion at times, for which he takes soda.

Roentgenograms in June, 1924, showed one tooth of questionable vitality and one pulpless tooth with little roentgenographic evidence of infection. At the site of extraction of the upper left first bicuspid and first molar, some filling material remained, and the surrounding bone showed evidence of infection (Fig. 2 *A*). The two teeth were extracted, and the infected bone was curetted. Cultures in deep tubes of glucose brain broth agar showed a short chain streptococcus in all.

Two rabbits were inoculated with the mixed broth cultures. One rabbit was dead the following morning and showed many hemorrhages in the duodenum. The second rabbit was killed. This one showed also many hemorrhages in the first third of the duodenum, without lesions elsewhere (Fig. 1). In order to determine whether the area of infected bone might play a part in the causation of the ulcer, one rabbit was injected with 5 c.c. of the broth culture from this area only. At necropsy, twenty-four hours later, the duodenum showed massive hemorrhages (Fig. 2 *B*). There were no other lesions.

CASE 2.—M. B. M., a housewife, aged 45, seen in February, 1921, for gastric symptoms quite typical of peptic ulcer, for twenty years had had periodic attacks of stomach trouble consisting of a gnawing sensation in the epigastrium coming on two to three hours after eating, and relieved by food or soda. For the last five years, during the attacks, she would frequently be awakened at 1 or 2 a. m. and have to get up and take soda or magnesia magma for relief. The trouble came on about twice a year, and usually lasted from three to five weeks. During the last few years the symptoms were relieved by a bread and milk diet.

Fig. 2.—*A*, molar region of Patient 1: filling material and area of infected bone at site of extraction of teeth two years previously; *B*, duodenum of rabbit injected with streptococcus grown from the infected bone.

Her first stomach symptoms came on immediately after a severe attack of sore throat, which was diagnosed as diphtheria. She had had frequent attacks of tonsillitis as a girl, but none for ten years. She had had an attack of glaucoma in 1920. For the last four years she had been troubled at times with rheumatism.

The physical examination was negative except for enlarged cryptic tonsils. The roentgen-ray examination of the gastro-intestinal tract revealed hyperperistalsis and a moderate retention of the barium meal at the end of five hours. The duodenal cap was not visualized. Examination of the stool showed occult blood.

She was sent to the hospital and put on the Sippy treatment, and in a few days was symptom free. During the fourth week in the hospital she developed tonsillitis and had a high temperature for three days. Suspecting the possible relationship between the infected tonsils and the ulcer, we advised her to have a tonsillectomy. Being less certain then than now of the importance of focal infection in the causation of ulcer, the

10. Haden, R. L.: Elective Localization in Eye of Bacteria from Infected Teeth, Arch. Int. Med. **32**: 828 (Dec.) 1923.
11. Haden, R. L.: Am. J. M. Sc., to be published.
12. Haden, R. L., and Jordan, W. H.: Multiple Onychia as a Manifestation of Focal Infection, Arch. Dermat. & Syph. **8**: 31 (July) 1923.

tonsillectomy was merely advised but not urged, and naturally was not done. She carried out the Sippy treatment faithfully for nine months. However, in November, 1922, all her symptoms recurred and continued until February, 1923, when she was sent to the hospital for a tonsillectomy and medical management. She has been symptom-free since operation

Fig. 3.—*A*, lateral incisor teeth of Patient 3; *B*, duodenum of rabbit following the injection of culture from the lateral incisor indicated by arrow above.

Fig. 4.—Culture in glucose brain agar of the lateral incisor indicated by arrow in Figure 3. The absence of colonies at the top of the tube may be noted; the organism will grow only under partial oxygen tension.

The tonsil cultures showed only a green producing streptococcus. Two rabbits were injected with 5 c.c. each of the broth culture. At necropsy one rabbit had many hemorrhages in the first part of the duodenum; the other, a small number in the same location.

CASE 3.—J. J. W., a plumber, aged 32, gave a typical history of recurring attacks of duodenal ulcer over a period of six years. The present attack had begun five weeks before, and had been unusually severe. He was in a good state of nutrition. The tonsils were small, and no pus could be expressed. The heart sounds were clear; the pulse ranged from 80 to 100; the blood pressure was: systolic, 140; diastolic, 100. There was tenderness in the epigastrium.

The roentgenograms of the teeth showed a large area of bone absorption around the lower right and left lateral incisors (Fig. 3 *A*). On culture, there was a profuse growth of streptococci which would not grow to the top of the culture tube (Fig. 4). There was also an area of questionable infection at the site of extraction of another tooth.

Two rabbits were injected with the mixed cultures from the two incisor teeth. Both were killed the following day. One showed a massive hemorrhage in the duodenal bulb (Fig. 3 *B*), with no lesions elsewhere. The other showed one moderate sized hemorrhage in the first third of the duodenum, and a slight purulent arthritis. Following the extraction of the teeth, the symptoms were relieved.

CASE 4.—E. L. W., a man, aged 29, a secretary, had had a copious gastric hemorrhage, July 29, 1922. For six months preceding this attack he had suffered almost constantly with heartburn and eructation of gas. The symptoms were relieved by food and soda. Roentgenographic examination at the time of the hemorrhage showed a duodenal ulcer.

The symptoms were only partly alleviated by rest, diet and alkalis. He continued to have periodic attacks of "indigestion." He had had several teeth treated, one of which was abscessed, shortly before the gastric hemorrhage. He had never had a serious illness previously, and had had no attacks of tonsillitis since childhood.

When seen, March 1, 1924, the physical examination was negative except for large red tonsils, from which frank pus could be expressed. Cultures were made from the pus expressed in glucose brain broth. Two rabbits were injected with 5 c.c. each of the broth culture. When necropsy was done forty-eight hours after injection, one animal was found to have a large ulcer of the pyloric end of the stomach (Fig. 5), with no other lesions. The other rabbit showed several small hemorrhages in the stomach, and early lesions in the medulla of the kidney.

The tonsils were removed. The patient had one slight attack of stomach trouble three weeks after tonsillectomy. When seen three months later, he was entirely free of symptoms.

CASE 5.—W. T. G., a business man, aged 43, complained of a dull, burning sensation in the epigastrium in October, 1922. The trouble came on from half an hour to two hours after meals, and was relieved by food or soda. He had frequent heartburn, but no acute pain or vomiting. The physical examination was negative except for tenderness at one tip of the ninth rib in front, and several pulpless teeth. The tonsils had been removed. The patient became symptom-free on a special diet until April, 1923, when he presented typical symptoms of a duodenal ulcer. Gastric analysis showed free hydrochloric acid, 40 acidity per cent., and total acid, 65 acidity per cent. The roentgenographic examination showed marked deformity of the duodenal bulb. Roentgenograms of the three pulpless teeth at this time showed that all had some bone absorption around the root tip. The three teeth were extracted. Cultures of each tooth in deep tubes of glucose brain broth showed many colonies of bacteria.

Two rabbits were injected with the broth culture from each tooth. Two animals showed no lesions anywhere, and two only purulent fluid in the larger joints. The two rabbits injected with the culture from the upper right lateral incisor (Fig. 6) died the day following injection. There were many hemorrhagic areas with erosion in the stomach, some of which had progressed to ulceration (Fig. 6). Three other animals were injected with the same organism in doses down to 0.5 c.c. All showed at necropsy hemorrhage in the gastric mucosa.

Fig 5 (Case 4).—Ulcer of pyloric end of stomach produced by the intravenous injection of bacteria from the tonsil.

CASE 6.—M. G. S., a dentist, aged 32, had typical symptoms of a duodenal ulcer in 1917. Gastric analysis at this time showed a hyperacidity, and roentgenograms, a deformity of the duodenal bulb. Following this initial attack, there were successive similar attacks at intervals of from six to twelve months, each lasting several weeks. In February, 1924, he had a large hemorrhage. The roentgenographic examination was repeated in 1921 and 1924, the typical findings of duodenal ulcer being apparent each time.

The tonsils had been removed in 1917. He had had attacks of tonsillitis. There had been no other serious illness.

When seen, in May, 1924, another attack was just beginning. The only positive finding on examination was infected adenoid tissue in the nasopharynx and some remaining tonsil tissue. Pus was expressed from the tonsil tissue. Two rabbits were

injected with the broth culture and killed twenty-four hours later. Both animals showed many hemorrhages in the duodenal bulb (Fig. 7 *A*). The tonsil and adenoid tissue were removed the following week. One rabbit was injected with the culture of the excised tissue. At necropsy there were numerous hemorrhages in the duodenum (Fig. 7 *B*), and several areas of hemorrhages and necrosis were present in the pyloric end of the stomach.

Fig. 6.—Stomach of rabbit following the injection of culture from tooth of Patient 5, indicated by arrow in inset. The other tooth was also proved by culture to be infected, but the organisms isolated produced no gastric lesions in animals.

Following the operation there was a marked improvement in the gastric symptoms.

COMMENT

The reproduction in animals of the lesion with which the patient presents himself, by the injection of bacteria recovered from chronic foci in the patient, is the strongest evidence of a causal relationship of the focus to the lesion. In many of the cases studied, there is the additional evidence of symptomatic improvement or cure of the patient following the removal of the foci of chronic infection.

The point of localization of the infection in the experimental animals is of especial interest. In all, the duodenal lesions were limited to the first third of the duodenum, or the duodenal bulb. The one exception was a very extensive involvement which extended from the pyloric ring through the greater part of the duodenum (Fig. 2 *B*). Clinically, ulcers occur only in the location observed in experimental animals. The usual explanation given for this localization is that the first third is the only part of the duodenum in which free hydrochloric acid is found. Mayo expresses this theory in the statement that "only within this neutralizing zone can ulcer occur." Since the lesions produced by the intravenous injection of bacteria are limited to the duodenal bulb, it is apparent that factors other than the presence of free hydrochloric acid must determine the localization. It most probably happens that the oxygen tension or some other factor is optimal here for the localization of the bacteria. Likewise, most of the stomach ulcers produced experimentally occur near the pyloric ring just as they do clinically in man.

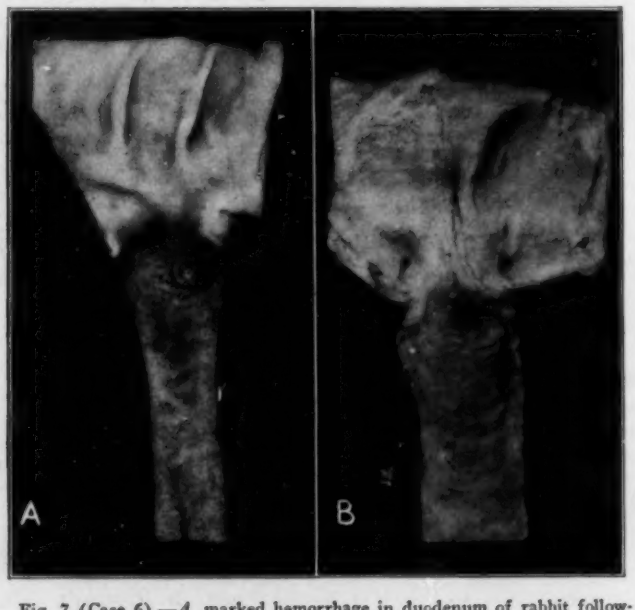

Fig. 7 (Case 6).—*A*, marked hemorrhage in duodenum of rabbit following injection of culture of pus expressed from stub of tonsil; *B*, hemorrhage and ulceration in the stomach, and hemorrhage in duodenum produced by the injection of culture from tonsil tissue after excision.

The cases cited emphasize several interesting and important points in relation to chronic foci. One patient (Case 6) had had, as he thought, all possible foci removed. Careful examination showed the presence of a stub of tonsil, from which pus could be expressed. Injections of a broth culture of the pus produced marked lesions of the duodenum in rabbit. Cultures of the tonsillar tissue after removal gave similar results. Such patients are often shown as proof against the infectious theory of ulcer, since it is said that they have no possible focus. The focus simply has not been found.

Infection remaining at the site of excised tonsils is much less important, however, than residual infection at the site of extraction of infected teeth. The simple extraction of an infected tooth in the great majority of instances effectively removes the infection. In some cases, however, the patient's resistance is not sufficiently great to heal the area of infected bone. This is especially common in cases in which systemic disease is arising from the infected area since such, in itself, is evidence of insufficient resistance to overcome the infection. Such residual infections may smolder for years, and again produce systemic disease when the patient's resistance is lowered. Case 1 in this series illustrates the occurrence of peptic lesions from areas of residual infection in the jaws. This patient had had a bleeding duodenal ulcer, which had been relieved by the extraction of infected teeth. Roentgenogram at the site of extraction, over two years later, showed some gutta percha (Fig. 2 *A*) remaining and evident infected bone. Streptococci were recovered from the curetted bone, which, on intravenous injection, produced extensive duodenal lesions (Fig. 2 *B*).

Fig. 8.—First molar tooth of patient with duodenal ulcer which shows no roentgenographic evidence of infection. The culture showed an anaerobic streptococcus, which produced gastric lesions in all rabbits injected.

Another point little appreciated in evaluating possible dental infection as a factor in systemic disease is that roentgenographic findings cannot be translated into terms of numbers of bacteria. A pulpless tooth that does not show sufficient bone destruction to be evident in the roentgenogram may, nevertheless, harbor enough bacteria to be a focus of serious infection. It has been shown by bacteriologic and experimental methods that the roentgenographic negative pulpless tooth is almost as frequently infected as the one showing bone destruction.[13] Figure 8 shows the molar tooth of a patient with a duodenal ulcer. There is no roentgenographic evidence of infection, yet a culture showed a good

13. Haden, R. L.: Unpublished data.

growth of an anaerobic streptococcus, which produced gastric lesions on intravenous injection in rabbits.

In handling focal infection, it is important to appreciate the fact that the foci may be multiple. Demonstration of lesions in animals with cultures from a single focus is no proof that this alone is the cause. Other foci may be equally important. In cases in which there is serious disease of focal origin, it is imperative that all possible foci be removed.

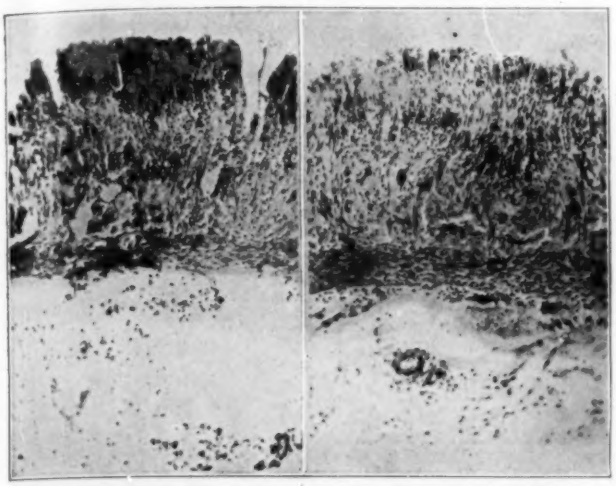

Fig. 9.—Stomach lesions in rabbits produced by intravenous inoculation of streptococci from dental infection: hemorrhage, polymorphonuclear infiltration, necrosis of mucosa, edema, cellular infiltration, and perivascular infiltration of peritoneum.

Judd [14] has called attention to the fact that a large part of the patients diagnosed clinically as having duodenal ulcer do not show ulceration of the duodenum at operation. The lesion is in reality a duodenitis. Such a condition must resemble the anatomic lesion seen commonly in the experimental animals. Sections of the duodenum show diffuse hemorrhage, polymorphonuclear infiltration, and necrosis of mucosa (Fig. 9). It is very probable that many patients with symptoms of gastric or duodenal malfunction without demonstrable focal lesions have some anatomic lesion of focal origin which is not severe enough to lead to actual ulceration. The idea that gastroduodenal lesions of focal origin must be embolic in nature is erroneous. In experimental animals, embolic lesions are sometimes encountered, but usually there is only a focal injury of mucosa not dependent on vascular occlusion.

SUMMARY AND CONCLUSIONS

In the case reported, experimental proof of a causal relationship of chronic foci of infection to an existent peptic ulcer was obtained by the injection into animals of bacteria recovered from the focus.

In twelve patients, dental infection was probably the primary cause. Forty-five rabbits were injected with cultures from dental foci in three patients; 53 per cent. of the animals showed peptic lesions at necropsy. Only 7 per cent. of 535 control animals similarly injected had such lesions.

Eleven rabbits were injected with the cultures from the tonsils of five patients. Ten showed at necropsy lesions of the stomach or duodenum.

The duodenal lesions that are observed experimentally are limited to the duodenal bulb, just as they are in man.

The gastric lesions have a similar anatomic distribution. The evidence presented is good proof of the infectious theory of peptic ulcer.

Patients with peptic ulcer should be thoroughly studied from the standpoint of chronic infection, and all possible foci removed.

Gastroduodenal malfunction without demonstrable focal lesions may likewise be a manifestation of focal infection.

14. Judd, E. S.: J.-Lancet **42**: 381 (Aug. 1) 1922.

TWO PRIMARY TUMORS OF THE GASSERIAN GANGLION *

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Tumors of the gasserian ganglion are of considerable interest because of their rare occurrence, and because of the difficulty in diagnosis. In many of the cases reported, there seems to be no sharp differentiation between those primary to the ganglion and those of the adjacent region, involving the ganglion coincidently. Few, if any, cases reported can be said to have originated within the ganglion itself, but rather in its sheath or the neighboring dura. Hellsten [1] believes that the ganglionic tissue possesses a peculiar resistance to tumor invasion, a fact that is further borne out by the lack of tumor involvement of the spinal ganglions, which is so seldom found. Frazier [2] discusses in detail this unusual condition. At the time Frazier wrote, only fourteen tumors had been exposed at operation, the first being in 1895, by Krogius. Of these fourteen, ten were inoperable. Since that time, Henneberg [3] has reported a case of trigeminal pain due to lymphoma of both gasserian ganglions. The patient succumbed to sepsis. At necropsy, a primary lymphoma was found in the intestines. The changes in the ganglions were secondary, and could scarcely be classed as tumors. The only other cases reported are four by Sheldon,[4] from the Mayo Clinic. Of these, only one appears to have been limited to the ganglion proper; the others were too advanced to establish a definite ganglionic localization.

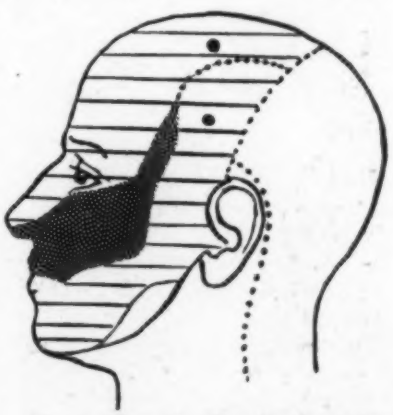

Fig. 1 (Case 1).—The two large dots represent areas of most intense pain: horizontal lines indicate impaired sensation for pain, which was also impaired in area shaded black where temperature was wholly lost.

The symptomatology by which these cases may be recognized is, of course, first, pain in the distribution of the fifth cranial nerve, usually involving at first only one branch and later spreading to the others. This pain, unlike that of true trigeminal neuralgia, is constant, without a trigger zone, not induced by eating or drinking, and not relieved or only partially so, by alcoholic

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1. Hellsten: Deutsch. Ztschr. f. Nervenheilk. **53**: 290, 1914.
2. Frazier, C. H., in Keen: Principles and Practice of Surgery **8**: 200-202, 1921.
3. Henneberg, R.: Klin. Wchnschr. **1**: 2479-2480.
4. Shelden, W. D.: Tumors Involving the Gasserian Ganglion, J. A. M. A. **77**: 700 (Aug. 27) 1921.

injection. Associated are subjective and objective sensory disturbances, often with disassociation. In addition, there is frequently motor weakness of the fifth and a sixth nerve palsy, with loss of corneal reflex. Such a picture is rather closely represented in the first case here recorded, and, when seen thus early, offers some hope of relief. Occasionally, sphenoidal sinus disease is to be excluded, and this may be done by roentgen-ray examination, and lack of motor and sensory findings, as well as by the degree of pain, which is less severe in sinus conditions. In late cases, the cervical lymphatic nodes may be the seat of pathologic changes, but this information is of late confirmatory value rather than of assistance in early diagnosis. If there is increased intracranial pressure and neighborhood symptoms of deafness, tinnitus, hemiplegia, and ataxia, with involvement of other structures in the middle or posterior fossa, surgery offers the hope of only palliative relief.

REPORT OF CASES

CASE 1.—*History.*—A. S., a Jewish woman, aged 73, admitted to the neurosurgical service of the University Hospital, Feb. 16, 1923, sought relief from a "pain in the head," which had been present for a year. At first, it had occurred only every week or two, but had increased in frequency and severity until she was unable to sleep. The constant pain, which was "pounding" in character, was aggravated by bending over and by chiropractic treatments, and was not relieved by heat or by medicine. Soon after the onset, she had diplopia, which had persisted. She had no vertigo or tinnitus, no vomiting and, aside from nocturia, no symptoms referable to other organs. She stated that the left side of her face felt "wooden."

The previous history was negative for any severe illness or surgical operations. The family history was negative as far as could be ascertained. The only point of interest was that a daughter had died following an operation for brain tumor.

Fig. 2 (Case 1).—Appearance of patient shortly after operation, showing sixth nerve palsy which was present on admission.

Physical Examination.—She was well nourished and weighed 160 pounds (72.6 kg.). The blood pressure was 140 systolic, and 70 diastolic. The left border of the heart was uncertain. The sounds were distantly heard only after the breath was held, and an occasional extrasystole. In the lungs, the apical sounds were harsh, and the bases were free from râles. There was some cyanosis of the hands, and the radial pulse was weak. The patient was mentally clear. The cranial nerves were normal except for the fifth and sixth; the tactile sensation was not impaired; pain was diminished throughout; temperature was lost in the second division (Fig. 1), and there was paralysis of the left external rectus (Fig. 2). Otherwise, the motor and sensory examinations were negative. There was no disturbance of gait, coordination or station. The reflexes all gave normal responses, and there were no abnormal reflexes.

The spinal fluid pressure was 11 mm. of mercury; 5 cells were present, the Wassermann reaction was negative. Examination of the blood revealed: red blood corpuscles, 5,000,000; hemoglobin, 100; white blood corpuscles, 15,300; polymorphonuclears, 88 per cent.; lymphocytes, 9 per cent.; mononuclears, 2 per cent.; transitionals, 1 per cent. The Wassermann reaction was negative. The kidney function for the first hour was 25 per cent.; for the second hour, 20 per cent., and the total was 45 per cent.

A tentative diagnosis of tumor of the ganglion was made, and the operation was performed by Dr. Charles H. Frazier, February 23.

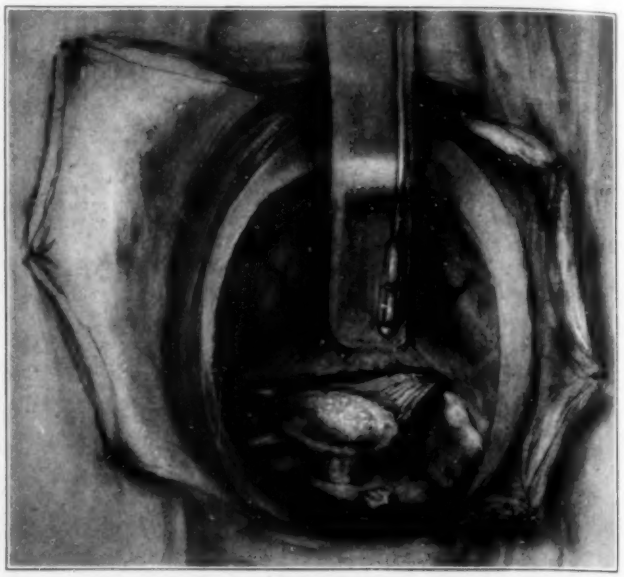

Fig. 3 (Case 1).—Drawing of tumor in situ.

Operation and Result.—On account of the age of the patient, the surgeon chose local anesthesia. A slightly larger opening than is usual for a section of the sensory root was made. When the ganglion was approached, an oval swelling was seen on the superior surface, representing the tumor (Fig. 3). It involved the outer two thirds of the ganglion, extending as far forward as the second division is given off. The major portion of the growth was posterior to this, and when the ganglion and tumor were removed together, there remained a small cavity to the inner side of the foramen ovale. There was little difficulty in isolating the growth from its overlying dura, and apparently it had its origin from the ganglion or from its sheath. After the ganglion was reached and during the resection of the growth, pain was controlled by 2 per cent. procain. Before the wound was closed, 95 per cent. alcohol was injected into that portion which was given off from the first division. The operation was completed with so little discomfort that the patient believed she was under an examination and could not have undergone an operation.

Dr. Walter Freeman reported that the tumor was 2 by 2 by 1.5 cm., friable, lobulated, and apparently springing from the second division and following back from the ganglion to the root. On section, many large cells with vesicular nuclei were seen in groups. There was a definite tendency toward the formation of whorls (Fig. 4). A diagnosis of endothelioma was made. Convalescence was uneventful, and the patient left the hospital relieved of her pain. The sixth nerve palsy was as before operation (Fig. 2), and there was total anesthesia for pain, temperature and tactile sensation throughout the distribution of the left fifth nerve (Fig. 5). The corneal reflex was lost, and the left pupil was slightly larger than the right and its response to light sluggish. November 26, nine months after the operation, the patient's daughter reported that her mother was "free from pain, well and happy."

CASE 2.—*History.*—J. W. M., a man, aged 55, admitted to the neurosurgical service of the University Hospital, May 3, 1924, had first noted a pain along the left side of the tongue, about one and a half years before. The pain was not severe and was present every day for months. He was unable to give any special characteristic description. There was an inter-

val of freedom for about three months, when it returned, this time including the teeth, jaw and face, as well as the tongue. The pain was now sharp, piercing, tearing and aggravated by talking, eating and contact until he dreaded going to the table. He was free from pain at night. Oct. 15, 1923, he received an alcoholic injection of the third division, which gave him absolute relief until three days before the present admission, when he began to feel "twitches," which, however, were not severe; but the memory of the previous pain was so dreadful that he demanded operation before there was any further return. The past history had no bearing on the case.

The patient was well nourished and in excellent condition. On two occasions the neurologic examination was negative for any abnormal findings of the cranial nerves or any symptoms.

Operation and Result.—May 6, Dr. Charles H. Frazier operated on the patient, expecting to avulse the sensory root. The usual approach was made. After exposure of the ganglion, and while attempting to expose the root, there presented what appeared grossly to be a granuloma evidently taking its origin from some structure to the inner side of the ganglion and overlying the sensory root. It was not encapsulated, and only a portion could be removed with safety, on account of the proximity to the cavernous sinus.

The patient's operative recovery was uneventful. On discharge, there were no complaints. The corneal reflex was active. The tactile, temperature and pain sensations were lost in the area supplied by the third division, moderately impaired in the second, and slightly impaired in the first division (Fig. 6).

The pathologist reported the specimen of tissue to be that of an endothelioma.

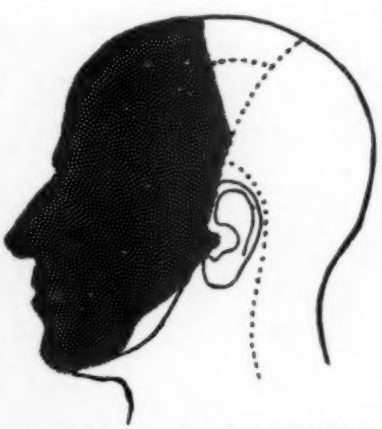

Fig. 5 (Case 1).—Loss of pain, tactile and temperature sensations following operation.

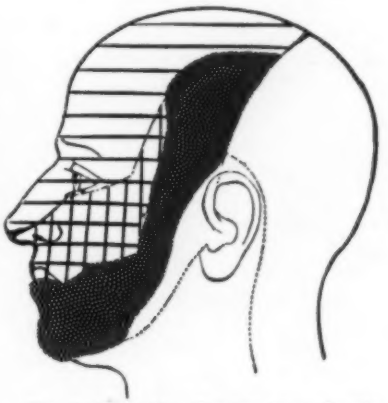

Fig. 6 (Case 2).—Sensory loss of pain, temperature and tactile sensation in third division, impaired in second and less so in the first division.

COMMENT

Both of these cases showed early involvement, and the second did not permit differential diagnosis from trigeminal neuralgia. While the immediate results in both cases were relief of pain, the ultimate prognosis is not hopeful. Recurrence is the rule rather than the exception, and often the pain persists even after removal of the tumor. The theories that have been advanced in explanation of this phenomenon include: (1) the extension of the tumor into the stump of the fifth nerve, and (2) the development of a neurosis of functional origin as a result of the previous intense suffering.

In 25 per cent. of the cases, the lesion is an endothelioma, and, curiously enough, the left side is affected in 60 per cent. of the cases. Marchand has described in greater detail than any other observer the structure of these endotheliomas. Scattered through a reticulum of connective tissue fibrils are round epithelial cells with a clear homogeneous cytoplasm. At times there is acinous formation, comparable to the lining capsule of the ganglion and also to the sheath of Schwann. This might indicate that these tumors are an undifferentiated stage of ganglion anlage; if so, "neurozytoma" would be an appropriate term for them.

Fig. 4 (Case 1).—Microscopic section, showing whorl arrangement.

CONCLUSIONS

1. Primary tumors or tumors sharply localized about the gasserian ganglion are rare.
2. Surgical treatment is always indicated if for palliative reasons only. The eventual prognosis is grave, since even in early cases recurrence is frequent.

3600 Walnut Street.

Lactic Acid in Man.—Lactic acid may be studied directly in man by its estimation in blood removed in the usual way from a vein. During muscular activity, the lactic acid in the blood rises, attaining finally, if the exercise is continued long enough, a maximum characteristic of the effort made. After awhile the lactic acid distributes itself by diffusion equally in all tissues that are directly in contact with the blood stream. During recovery this lactic acid disappears, in a period depending on the severity and duration of the preceding exercise, but not exceeding, in normal man, about ninety minutes. The removal of lactic acid from the blood, which is a sign of its preceding removal from the muscle, is produced by oxidative processes occurring in the latter. These oxidations can be studied by ordinary respiratory methods, employing the Douglas bag technic. . . . The total oxygen used in the recovery process in this way we have named the "oxygen debt at the end of exercise." Assuming, what may be shown to be very nearly true, that it is all used in the oxidative removal of lactic acid, and employing a value of 5.2:1 for the efficiency of recovery, we may calculate from the oxygen debt the lactic acid present in the body at the end of exercise. We find that 3 gm. or more of lactic acid may be liberated per second in the muscles of a powerful man, and that the body is able to tolerate an amount up to a total of 130 gm. The oxygen debt may attain a value of 18.7 liters.—Hill, A. V.: Lecture delivered at various universities in the United States in October and November, 1924.

OBSERVATIONS OF THE VISUALIZED GALLBLADDER BY GRAHAM METHOD

WITH REFERENCE TO THE EFFECT OF NONSURGICAL BILIARY DRAINAGE: PRELIMINARY REPORT *

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AND
LEON J. MENVILLE, M.D.
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The recent attainment of Graham, Cole and Copher,[1] visualizing the gallbladder by the simple and safe method of intravenous injection of the sodium salt of tetrabromphenolphthalein, has offered the opportunity for the investigations in the present report. The primary purpose of our studies is to determine whether or not the gallbladder is altered by a nonsurgical biliary drainage following the introduction of magnesium sulphate solution directly into the duodenum (Lyon-Meltzer technic). Heretofore all such observations on the gallbladder have been made on anesthetized animals and human beings during operation. Auster and Crohn,[2] as a result of their experimental work on dogs, concluded that the gallbladder itself does not appear to participate actively in the biliary excretion. Differing with the latter, Sachs [3] and Lesner [4] have reported contractions of the gallbladder following stimulation with magnesium sulphate solution.

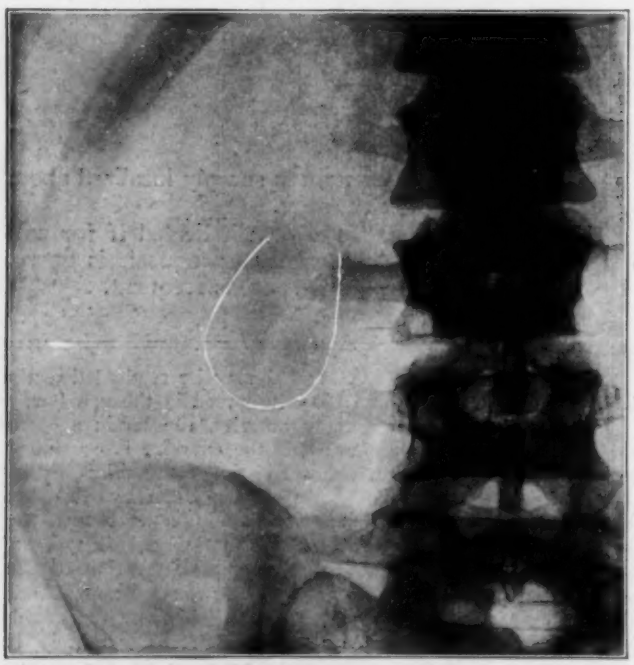

Fig. 1 (Case 1).—Gallbladder shadow twenty-four hours after injection of dye.

Friedenwald, Martindale and Kearney,[5] in their series of experiments with thirty-four dogs, employing the same method, were never able to observe an actual contraction of the gallbladder.

Bassler, Luckett and Lutz,[6] observing ten persons during operation with the duodenal tube in situ, were unable in any instance to prove any "vermicular action on the part of the gallbladder or any visible reason to suggest that any contraction took place or that the characteristic dark colored bile, when obtained, was from the gallbladder." In answer to all these negative results,

Fig. 2 (Case 1).—Gallbladder shadow eleven and one-half hours after injection of dye: tube in second portion of duodenum.

Lyon states that the antagonistic innervation of the gallbladder is a mechanism easily disturbed, which might be inhibited or even abolished by the effect of the general anesthetic; furthermore, Friedenwald, Martindale and Kearney [5] are still of the opinion that more experimental detail work is required to settle some of the contested phases of duodenobiliary drainage.

The observations on the gallbladder in the two following cases were made on a physiologic basis, obviating all interferences with the gallbladder mechanism that must necessarily accompany anesthesia and operative procedure.

REPORT OF CASES

CASE 1.—C. R., a white man, aged 32, examined, July 10, 1924, had been sick for one week, complaining of general bodily pains, chilly sensations and weakness. There was a moderate jaundice and palpable liver on natural inspiration. The temperature was 99.4 F. The urine contained much bile. The phenoltetrachlorphthalein liver test of Rosenthal showed the following: fifteen minutes, 15 per cent.; one hour, 10 per cent.; two hours, 10 per cent. The clinical diagnosis was acute catarrhal jaundice.

July 26, 5.5 gm. of the sodium salt of tetrabromphenolphthalein was injected intravenously in two equal doses, at 8:30 and

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1. Graham, E. A.; Cole, W. H., and Copher, G. H.: Visualization of the Gallbladder by the Sodium Salt of Tetrabromphenolphthalein, J. A. M. A. **82**: 1777 (May 31) 1924.

2. Auster, L. S., and Crohn, B. B.: Notes on Studies in the Physiology of the Gallbladder, Am. J. M. Sc. **164**: 345 (Sept.) 1922.

3. Sachs, Adolph: Lyon-Meltzer Gallbladder Drainage, J. Nebraska M. J. **6**: 225 (Aug.) 1921.

4. Lesner: Proc. M. Sect. Mississippi Valley M. A., October, 1920.

5. Friedenwald, Julius; Martindale, J. W., and Kearney, F. X.: Animal Experiments on Certain Phases of Lyon-Meltzer Method of Biliary Drainage, J. Metabol. Res. **2**: 349 (Sept.) 1922.

6. Bassler, Anthony; Luckett, W. H., and Lutz, J. R.: Some Experiences with the Meltzer-Lyon Method of Draining the Biliary System, Am. J. M. Sc. **162**: 675 (Nov.) 1921.

9 a. m., respectively, after a fast of fifteen hours. The size of the gallbladder shadow at the end of twenty-four hours is shown in Figure 1. July 30, at 8:30 a. m., 5.5 gm. of the dye was injected in a single dose after a fast of fifteen hours. The duodenal tube was introduced at 6 p. m., and the gallbladder visualized, satisfactorily, for the first time, at 8 p. m., the tube being at this time in the second portion of the duodenum (Fig. 2). At 9:30 p. m., another roentgenogram (Fig. 3) was made of the visualized gallbladder. Immediately following, 50 c.c. of a 25 per cent. solution of magnesium sulphate was introduced directly into the duodenum, and after a lapse of eight minutes, drainage through the tube was allowed to take place for twenty minutes. The characteristic dark colored bile, so-called gallbladder contents, measured 60 c.c. Immediately following this biliary drainage, another roentgenogram (Fig. 4) was taken and showed a reduction in size and alteration in shape of the gallbladder shadow, representing the effect of a single stimulation with magnesium sulphate solution.

Fig. 3 (Case 1).—Gallbladder shadow thirteen hours after injection of dye, and immediately before nonsurgical biliary drainage.

CASE 2.—L. F., a white man, aged 44, seen May 22, 1924, complained of having abdominal cramps, from one to two attacks each month. This trouble started seven years before, with violent abdominal cramps accompanied by severe vomiting. He was treated for appendicitis by the Ochsner method. He was sensitive in the right lower abdomen and somewhat in the upper right quadrant. The clinical diagnosis was chronic appendicitis.

August 1, at 9:20 a. m., 5.5 gm. of the sodium salt of tetrabromphenolphthalein was injected intravenously. The duodenal tube was introduced at 6:20 p. m. At 7:10 p. m., a roentgenogram was taken showing the gallbladder shadow, immediately before drainage (Fig. 5). With the duodenal tube in the second portion of the duodenum, 50 c.c. of a 25 per cent. solution of magnesium sulphate was introduced through the tube, and after a lapse of eight minutes drainage of bile was started. Following a twenty-five minute drainage of duodenobiliary contents, another roentgenogram (Fig. 6) was immediately taken and showed a distinct reduction in size and alteration in shape of the gallbladder shadow. Eight minutes later a second stimulation with 50 c.c. of the salt solution was attempted, and in thirty-five minutes 20 c.c. more of the solution was introduced. We failed to obtain any bile. A roentgenogram was taken fifteen minutes later, one hour after

Fig. 4 (Case 1).—Gallbladder shadow after nonsurgical biliary drainage of twenty minutes' duration: reduction in size and alteration in shape of gallbladder shadow.

Fig. 5 (Case 2).—Gallbladder ten hours after injection of dye and immediately before nonsurgical biliary drainage: tube in second portion of duodenum.

Figure 6, and it was discovered that the duodenal tube had slipped back into the stomach. No appreciable change in the size or shape of the gallbladder could be noted.

TECHNIC

The roentgenograms in the two cases were taken with the same technic, the same distance, time, milliamperage, voltage and development being employed. Particular attention was given to the target to skin distance, realizing that varying the distance would magnify or decrease the size of the gallbladder shadow. This is important, as in this instance, the roentgenographic shadows of the gallbladder, relative to the diminution in size after drainage, was made by comparing one film with the other. The distance of 25 inches was employed. In other words, if the shadow was found reduced, we knew it was not due to a variation in the target skin distance, but the result of nonsurgical biliary drainage.

The Potter Buckey diaphragm was used in roentgenographing both cases, giving better detail.

A few of the prints made from the original roentgenograms were retouched, as the gallbladder shadow and that of the liver were nearly alike, on account of the print losing the finer details found on the original roentgenogram. In Case 2 no retouching was done, as the shadows were more distinct and clearer; this retouching held good only in Figures 1, 2, 3 and 4. In all the original films, the gallbladder shadow is perfectly clear in outline.

We also paid attention to a perfect and accurate centering, to avoid distortion in the shadows produced.

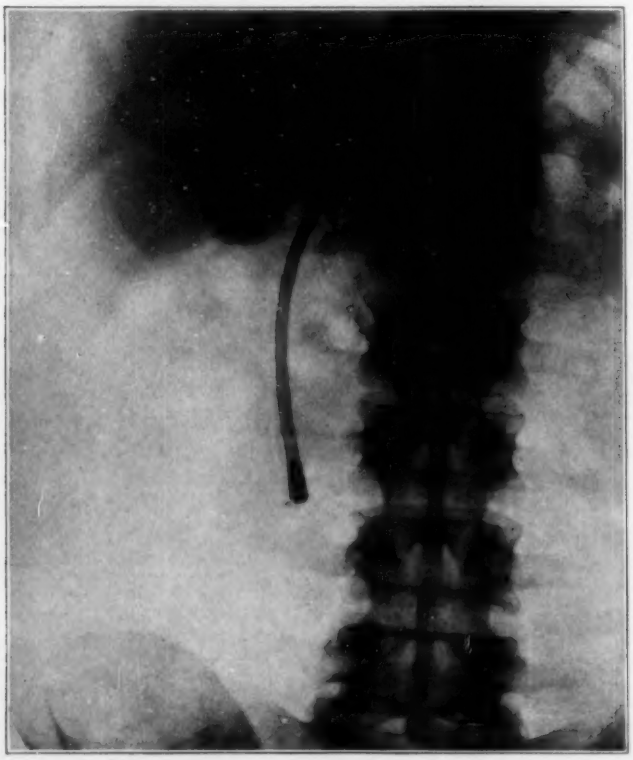

Fig. 6 (Case 2).—Gallbladder shadow after nonsurgical biliary drainage of twenty-five minutes' duration: distinct reduction in size and alteration of gallbladder shadow.

Fig. 7 (Case 2).—Gallbladder shadow thirteen hours after injection of the dye: Roentgenogram taken one hour after termination of nonsurgical biliary drainage; the shadow of the gallbladder remains the same both in size and in shape as in Figure 6.

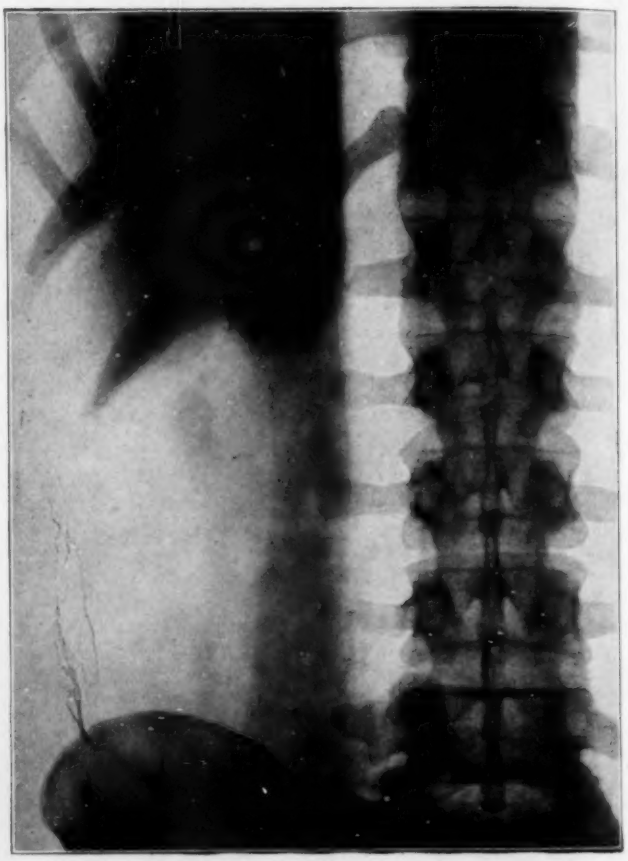

Fig. 8 (Case 2).—Gallbladder shadow eight hours after injection of dye.

CONCLUSIONS

1. The duodenobiliary drainage following a single stimulation with magnesium sulphate solution produces a reduction in size and alteration in shape of the gallbladder shadow when visualized by the Graham method. Plates taken at intervals up to twenty-four hours after injection of the dye, but without drainage, show no parallel diminution in size or alteration in shape of the shadow.

2. Since nonsurgical biliary drainage reduces the size and alters the shape of the gallbladder, we are led to conclude that drainage of the gallbladder does take place.

A NEW TREATMENT FOR UNDEVELOPED LOWER JAW

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Miss T., aged 22 (Fig. 1), consulted me for facial deformity in July, 1922, having been referred by Dr. R. J. Lynch of Des Moines, Iowa. She had been engaged in teaching, but

Fig. 1.—Patient before operation.

had given up this occupation because her deformity exposed her to ridicule. She was extremely down hearted and had worried greatly over her condition, which she had considered hopeless. The story was that she had been blind during the first year of her life and was not able to hold up her head: "It hung down." Teething and talking developed at the usual ages. She walked first at 18 or 20 months. At 5 years of age, it was noticed that the lower part of the face was small. At 13, she had a nervous breakdown and since that time had had more or less stiffness of the neck, pain over the back of the head, and aching where the neck joined the skull. She had fallen on the buttocks and hurt herself rather severely a short time before the onset of this trouble. The family history was negative.

The lower jaw was not properly shaped, nor was it developed. There was a complete absence of chin; the upper incisor teeth protruded quite beyond the lower lip when the jaws were closed. Only the molars (the third molars were not erupted) and second premolars were in proper occlusion; the two bodies converged abruptly from the first premolar regions to meet in the midline. The incisor teeth in the lower jaw were 7 mm. above the level of the others, and lay crowded together behind the plane joining the two canines; when the jaws were closed, they just touched the hard palate 0.75 cm. behind the roots of the upper incisors. The upper incisors projected at an angle of 45 degrees and were very large. Carrying the finger forward from below the angle, and attempting to follow the lower border of the body of the jaw, which lost itself in the tissues of the neck and throat, one found that the border made a very abrupt turn downward about a finger breadth in front of the angle, and almost at once seemed to come into contact with the hyoid bone. The patient could open the mouth so that a space of approximately 1 cm. separated the second lower molars from those above them. The patient said she could not bite a piece of meat, but could bite an apple. A roentgenogram (Fig. 2) showed the body bent down, as described; and from the bend forward to the midline, the body was deepened from above downward. The extra depth seemed to have been caused by the extraordinary growth of the alveolar process anterior to the molar region.

A certain stiffness of the neck coexisted, and the roentgenogram showed a peculiar haziness in the articulations of the second and third cervical vertebrae, while the anterior arch of the atlas was maldeveloped.

The patient told us that she had had "some kind of fever" in early childhood; otherwise she had always been healthy but had never had a chin.

COMMENT

The condition is one very easily recognized—undeveloped chin. It has not been given any particular name in this country; the Germans call it "bird face," while the French speak of it as "serpent jaw."

There are various factors involved in the etiology. About the most frequent cause has been true ankylosis of the temporomandibular joints, due to suppuration after fractures of the condyle and ascending rami, or following scarlet fever or other ailments in infancy or early childhood. Cases occur, however, in which there is no history of previous disease or injury.

The cause of the failure of development in this case is still unknown. There was good function in the temporomandibular joints, and the ascending rami seemed quite normal. All the roentgenograms of the condition that I have found show approximately the same bony deformity as this.

What struck me most at operation was the entire absence of anterior bellies of the digastric muscles. The border of the jaw lay very close to the hyoid bone. Not a trace of the anterior belly on either side could be seen. The posterior belly ended in the tendon, which lost itself on the hyoid bone, and some fibers went on and were attached to the mandible.

There was a stiffness of the patient's neck which has improved and, as remarked elsewhere, the shadows of the vertebrae are abnormal.

It is usually the absence of the chin that drives the patient to seek relief. As yet, not much has been offered.

Fig. 2.—Side view of face.

Bardenheuer,[1] and various others in Germany and France, advised building a chin on the already existing foundation, and they slipped bits of cartilage and pieces of rib under the soft tissues in front of the bone. Hard paraffin [2] has been used for the same purpose.

1. Bardenheuer: Verhandl. d. deutsch. Gesellsch. f. Chir., 1891, Part 2, p. 106. Esau: Zentralbl. f. Chir. **37**: 1636.
2. Eckstein: Arch. f. klin. Chir. **121**: 63, 1922. Izard: Rev. de stomatol **24**: 385 (July) 1922.

Blair,[3] in 1907, reported two cases wherein he relieved the condition by cutting the ascending rami of the jaw just above the level of the upper margin of the body, drawing the whole mass of both bodies forward and fastening the teeth to those of the upper jaw, while union occurred at the sites where the bones were cut. The pictures show the result to have been good in one case, while in the other the improvement is not so evident.

If all goes well—and there is no certainty about it by this method—the body can be drawn forward half the width of the ascending ramus. If drawn farther

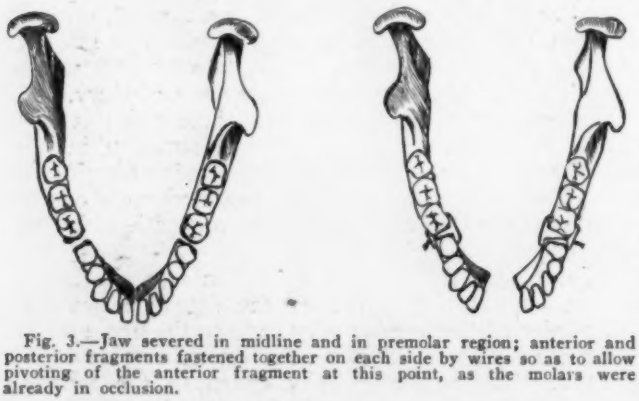

Fig. 3.—Jaw severed in midline and in premolar region; anterior and posterior fragments fastened together on each side by wires so as to allow pivoting of the anterior fragment at this point, as the molars were already in occlusion.

than this, the points of severance cannot make contact firmly enough to give strong union. Blair experienced difficulty in one case in getting the jaw forward and holding it there.

It seemed to me that the condition could be more easily relieved by cutting the jaw in midline and just in front of the molars, and then, after fastening the fragments in occlusion, doing free bone graft when suppuration should have ceased.

Experience with bone grafting by the method of Delagénière[4] forces me to regard it as an easy, simple and certain method of obtaining union in ununited fractures of the jaw and in fractures of the jaw with loss of substance, and I therefore felt quite sure the thing could be accomplished that way. It would, it is true, likely entail the loss of at least six teeth; but artificial dentures are less unsightly than lack of chin. The probability of suppuration need not cause any uneasiness if one knows what can be accomplished by the proper use of surgical solution of chlorinated soda (Dakin's solution) and drainage.

The real danger lay in uncovering the anterior fragments too much while performing the first operation, and thereby so destroying their blood supply as to lead to their necrosis.

The work was carried out at St. John's Hospital. To undertake such a task without the aid of a good dental colleague would be unthinkable. Dr. G. C. Smith of this city, who was associated with me in this case, did everything that a good dental colleague can do to make the case successful.

OPERATIVE PROCEDURE AND RESULT

Dr. Smith fashioned cap or gutter splints for the upper and lower jaw. The splint fastened on the upper was cast all of one piece, and small hooks turned upward were arranged about 1 cm. apart on its labial surface. It was cemented in place. That for the lower jaw was cast in four pieces, one to fit the teeth in each of the fragments, posterior to cover the molars and the first premolar. These also had small hooks turned downward fastened on the labial surface of each.

July 8, 1922, under local anesthesia, at the first operation, a curved incision concave upward was made across the patient's throat. It began about 1 inch in front of and below the angle, and its center crossed the middle of the thyroid cartilage. A flap consisting of skin and platysma was turned up as far as the lower border of the jaw. This border lay very close to the hyoid bone. There were no anterior bellies of the digastric muscles. Their places were occupied by a tendinous material continuous with the true tendons. The mylohyoid was present but was quite rudimentary. The soft parts were very carefully lifted from the anterior or external surface of the bone at the symphysis, care being taken not to uncover the lateral aspect of the bone or to separate the bone from the soft parts lying along its internal aspect. A wire saw was passed and the symphysis divided. We could now separate the parts, but this caused a widening at the angles and produced malocclusion in the molar region. The soft parts were then raised from the outer surface of the bone, just in the molar and premolar region, care being taken not to raise them from what was to become the anterior fragment. The bone was as hard as ivory, and we broke all the wire saws and then drilled and fractured. Before fracturing, we drilled a hole in each fragment and passed a No. 22 silver wire, which was left long. These wires kept the fractured ends in contact. We had begun with local anesthesia, but had so much trouble with the bone division through the narrow exposure that we were forced to give ether. We closed the splints the next day, easily drawing the fragments into proper position. The wound was closed by undercutting the skin of the neck down on the chest and drawing it up almost like a sleeve. The flaps met just about the level of the hyoid, and in uniting them I fastened them to the structures adhering to this bone, so that the lower flap could not exert any traction on the upper. A drain was placed at each point of section.

Healing occurred with very little suppuration. A small sequestrum came away from each side. The wires were removed

Fig. 4.—Appearance shortly after last bone graft.

in four weeks. The wounds were quickly closed, three sinuses being left, which were reopened twice. A small sequestrum (scale-like) came away on the left side. The entire healing lasted four months. The patient was sent home.

After having remained at home for about four months, she returned for a bone graft.

It was found that union had occurred at the point of section at the premolar region on the right side. On the left side there was no union, and the fragment, although anchored by the teeth to those in the upper jaw, swung in toward the midline.

3. Blair: Surg., Gynec. & Obst. **4**: 67, 1907.
4. Delagénière: Bull. et mém. Soc. de chir. de Paris **43**: 1048, 1916.

Dr. Smith, by means of elastic traction, drew the left fragment back into place in less than ten days. There was no longer sign of suppuration. Teeth loosened in the neighborhood of the section had been extracted long since, and the patient was ready for bone grafting.

The osteoperiosteal method of Delagénière was used. After having used all the known methods, I prefer this for the restoration of small or medium sized defects. I have omitted all details of its technic, for I have called attention to them elsewhere.[5]

May 14, 1923, the first bone graft operation was done. The scar was reopened and the flap turned forward so as to allow an osteoperiosteal bone graft to be placed from lower border to lower border and from internal surface to internal surface at the point of section in the midline. It was not considered advisable to apply a graft on the anterior aspect at this time, lest additional tension of the soft parts cause the left fragment to be displaced backward.

June 4, the patient was again operated on and an osteoperiosteal bone graft was applied at the point of section on the left side.

July 5, she was again operated on, and this time a bone graft (by the previous method) was applied to the point of section

Fig. 5.—Patient after operation.

on the right side; for, although union had occurred here, it was seen to be only a very thin bridge that connected the two fragments.

October 22, she was again operated on and an osteoperiosteal bone graft was placed at the point of section in the midline on the anterior or outer surface.

All the bone graft operations were performed under local anesthesia and all healed by first intention; consolidation quickly occurred at all the points grafted.

The jaws were kept closed for seventeen months, and union was found to be strong. We lost, in all, nine teeth, and the projecting incisors in the upper jaw were also removed. Dr. Smith constructed a prosthesis to take the place of the missing teeth. Figure 5 shows how the patient looks at present.

CONCLUSION

I believe that this method of making a chin has not been used before. The risk of losing one or both fragments must be considered, but with proper skill and care I think such risk is small. The result is better than that obtained by any other published method. The trouble is great, but the transformation both psychically and physically (the former is even more marked than the latter) is so pleasing that one feels well repaid.

5. Coughlin, W. T.: Ununited Fracture of Mandible, Surg. Clin. N. Am. **2**: 1609 (Dec.) 1922.

LIPOMA OF THE SCALP

REPORT OF CASE *

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BOSTON

"This condition is rare as a primary growth," according to Cushing,[1] "though the diffuse, symmetrical lipomata of the neck may extend to some extent on to the occipital region. Grosch, in a record of 685 lipomata found only 2 per cent. on the scalp."

Fig. 1.—Posterior view of the tumor.

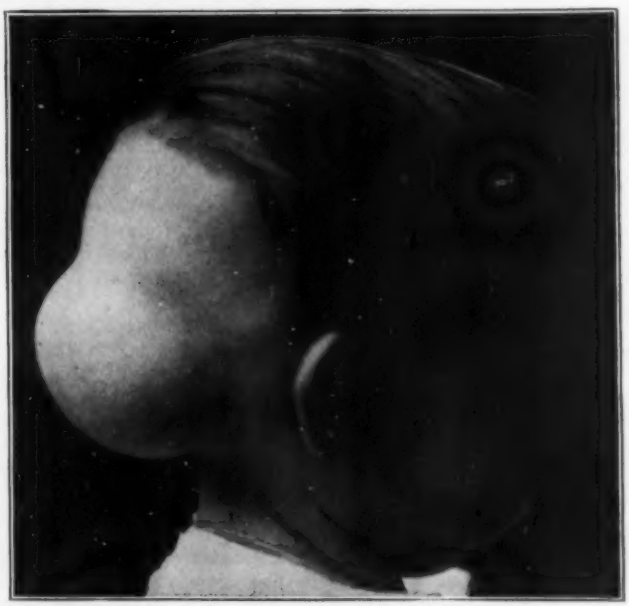

Fig. 2.—Lateral view of the tumor.

Herz [2] removed two lipomas from a man of 45, located on the back of the neck and occiput, respectively.

* From the Surgical Service, the Children's Hospital.

1. Cushing, Harvey, in Keen's Surgery, Philadelphia, W. B. Saunders Company **3**: 36, 1910.

2. Herz, L. F.: M. Rev. of Rev., January, 1920; abstr., Practical Medicine Series **2**: 86, 1921.

The former was 3 and the other 1½ inches wide. While moving under the skin, they were firmly adherent to the fascia. No drainage was used in the upper wound, and later there was another tumor removed nearby and of the same size.

Ochsner,[3] commenting on this report, wrote that both these locations are unusual for fatty tumors, which

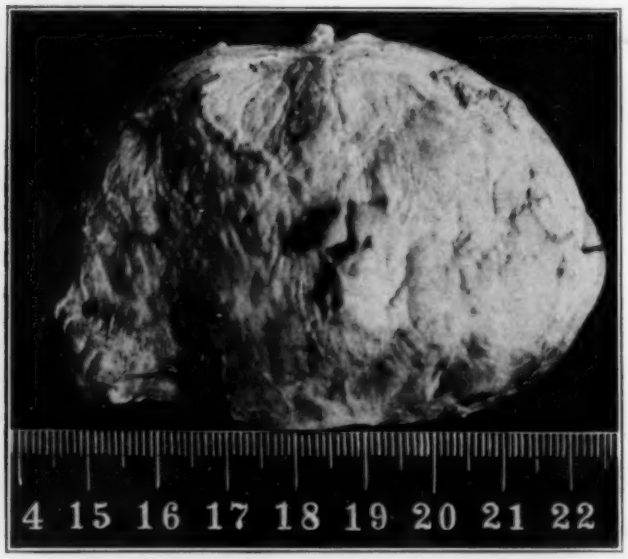

Fig. 3.—Convex aspect of the specimen, showing the well defined capsule.

prefer the ends of the limbs near the trunk and the trunk itself. Sometimes they are encountered at the other ends of the limbs, hands and feet. He further states that there is a form of tumor, known as dissecting lipoma, which occasionally occurs in the location of the tumors described by Herz. It follows the fascia, sometimes extending entirely around the neck, and at times displaces the thyroid. If the slightest lobule of this tumor is left at the primary operation, it will continue to grow, following the fascia, and will keep on until completely removed.

REPORT OF CASE

History.—B. H., a boy, aged 2 years and 4 months, was brought to the clinic because of a tumor of the scalp. The family and past histories were unimportant. At the age of about 4 months, a small lump was noticed on the back of the head, which had been gradually increasing in size.

Examination.—The physical examination was entirely negative except for the local condition. There was a hemispherical tumor of the scalp in the occipital region, measuring about 9 by 6 cm., most of it lying to the right of the median line. It was not compressible, but there was semifluctuation. Straining or coughing had no effect on its size, and there was no pulsation. No murmur or bruit was heard over it. No lobulation could be felt. The scalp moved freely over the tumor, which appeared to be adherent to the skull. A roentgenogram of the skull showed no defect of the bone.

A preoperative diagnosis of lipoma was made after eliminating dermoid cyst or wen, abscess or cephalocele; excision was recommended, and patient was admitted to the hospital, April 13, 1922.

Operation and Result.—April 15, the patient was placed in the prone position, the shoulders in holders and the forehead resting on the outrigger. The scalp around the tumor was prepared with ether and iodin. A 3 inch, vertical incision was made through the scalp overlying the tumor, coming down on a definite firm capsule. The tumor was between the aponeurosis and the pericranium. The scalp moved freely over it. By following the cleavage plane, the tumor was removed. The greatest difficulty was in getting the sessile base off the pericranium, where it was very adherent. After the tumor had been removed, the scalp, which at first appeared redundant, retracted to a considerable degree. There were no bleeding points requiring ligation. The scalp wound was closed with interrupted stitches of silkworm gut, without drainage, and a pressure bandage was applied. The tumor clinically appeared to be a dense lipoma, with characteristic lobulation. It was kidney shaped, but was concave on one side and convex on the other, from the contour of the cranium and pressure exerted between the layers in which it developed. The estimated size was 2½ inches long, 3½ inches wide and 1½ inches thick.

The preoperative diagnosis of lipoma was confirmed on examination of the tumor.

The stitches were removed on the sixth day, and the patient was discharged from the hospital on the eighth day after operation.

COMMENT

Lipoma of the scalp is rare at any age, and especially so in childhood. My experience with lipoma in children agrees with the following summary, which Pybus [4] has given of this condition.

Lipoma is not one of the commoner tumors found in childhood. It conforms in practically all particulars with those found in the adult. It is most commonly situated in the subcutaneous tissue, and is occasionally met with in the hand or sole of the foot and may be present at birth. It is rarely found in the other situations of adipose tissue, but is met with in the retroperitoneal tissue and along the course of the spermatic cord. The subcutaneous type of lipoma rarely gives much difficulty in diagnosis, but has to be distinguished from a tuberculous abscess. When situated in the intermuscular planes or in relation to one of the long bones, it may be mistaken for a sarcoma until exploration reveals its true nature. The lipoma

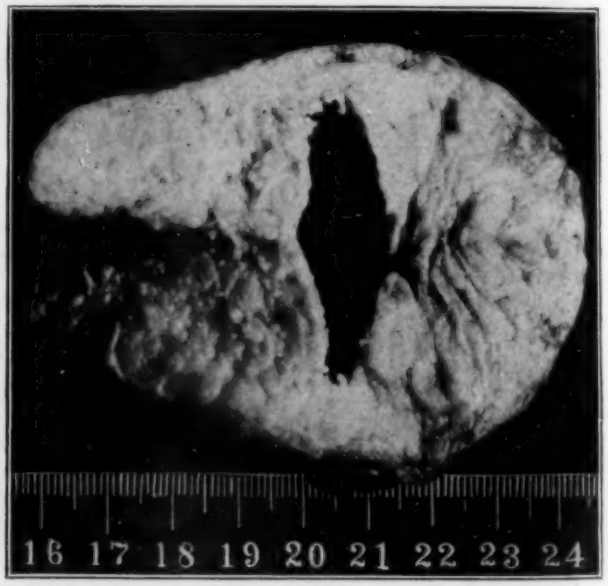

Fig. 4.—Specimen split and turned back along long axis, showing the disklike shape; section in the center was removed by the pathologist for examination.

may be pure or may be mixed with other tissue. Most often the other constituent is formed of new vessels, and a nevolipoma is found. A deposit of fat, in the nature of a lipomatosis rather than a true lipoma, may be found over the sac of a spina bifida or cranial meningocele.

270 Commonwealth Avenue.

3. Ochsner, A. J.: Practical Medicine Series **2**: 86, 1921.

4. Pybus, F. C.: The Surgical Diseases of Children, Philadelphia, P. Blakiston's Son & Co., 1922, p. 146.

A NEW METHOD OF DIAGNOSIS IN CERTAIN DISEASES OF THE SPINAL CORD

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Among the most difficult tasks confronting the physician is that of differentiating between operable and inoperable affections of the spinal cord. The symptoms of pain, of anesthesia and of hyperalgesia, of disturbances in the function of the bladder and the bowel are frequently misleading; and there is no motor disturbance characterizing disease of the spinal cord proper which may not be brought about as well by pressure on the cord of an adjoining tumor. The method employed by Ayer [1] brings greater certainty to bear on the differential diagnosis of subarachnoid block from disease of the spinal cord proper. It necessitates, however, the introduction of a needle into the cisterna magna and is therefore available only to the skilled surgeon. The injection of an iodized fat into the subarachnoid space in order to facilitate roentgen-ray examination, recently proposed by French neurologists,[2] is likewise mainly by way of the cisterna magna. An additional difficulty of the latter method is that, subsequent to the injection, the patient must maintain a standing or sitting posture for a number of hours.

The sign of induced tetanic myoclonus proposed places a ready means of diagnosis at the disposal of the neurologist, the surgeon and the general medical practitioner.

THE TETANIC STATE INDUCED BY HYPERPNEA

For an intelligent understanding of the sign to be described, a word regarding its general significance may not be amiss.

That overbreathing results in the tetanic state is a fact with which physiologists and biochemists are familiar. The phenomenon is but distantly remembered by the physician as among the scientific curiosities he was made to witness during the period of his medical training. Collip and Backus,[3] Grant and Goldman,[4] Davies, Haldane and Kennaway [5] and others have studied the chemistry of the blood in the tetanic state induced by voluntary deep breathing. They agree, on the whole, that the chemical change consists in a diminution of the hydrogen ion concentration, and that this transient relative alkalosis is brought about by the excessive removal of carbon dioxid from the alveoli of the lungs.

In a study of the tetanic state brought about by the voluntary exercise of hyperpnea, for the details of which the reader is referred to my original paper,[6] I found that its manifestations differ but slightly in normal persons. In persons affected with different abnormalities of the nervous system, however, the particular manner in which the tetanic state manifests itself is different. Thus, in some persons the ensuing tetany takes the form of a slight general hypertonus, which may be inferred from an exaggeration of the tendon reflexes. In some, intense rigidity of only the most skilled musculature ensues. In some, the incidence of the rigidity is selective for the musculature whose corresponding cerebral elements are diseased. In others, in place of a sustained muscular spasm, involuntary abnormal movements of many kinds occur. In some, the reduction of the conscious state that takes place is slight, and is discovered only by a careful examination of the state of the sensations and of the capacity for sustaining attention. In others, namely, in epileptics, complete unconsciousness may occur. And between the smallest reduction and the most complete suspension, every gradation and form of the conscious state is encountered during the tetanic state induced by voluntary deep breathing.

Among the patients experimented on were hemiplegics, some of whom were old and feeble and had serious cardiovascular disease; patients with advanced pulmonary tuberculosis; with acute encephalomyelitis, with every form of neurosyphilis; with disease of the brain stem, the cerebrum and the cerebellum. Not one of the numerous experiments was followed by any untoward results. It may therefore be stated with confidence that the procedure is entirely harmless.

SUSTAINED MUSCULAR RIGIDITY AND MUSCULAR FLACCIDITY

Five different manifestations of tetany occur during the exercise of hyperpnea in persons affected with different diseases of the spinal cord. Two of these manifestations I have already detailed in the general study of the subject referred to. The first occurs in traumatic, inflammatory or neoplastic lesions that sever the spinal cord completely or almost completely across. In this condition, the musculature innervated by the caudal segment of the severed cord remains as flaccid during the exercise as before it; while the muscles innervated by the cephalic portion of the cord become tetanized in a normal manner. By "normal" tetany is understood a sustained rigidity of certain parts, especially of the hands and generally of one or both sides of the face. The normal form of the tetanic hand is that of the "obstetrician's hand," in which the fingers are extended at their joints, semiflexed at the metacarpus and their ends closely approximated, the thumb being adducted and pressed against the palm of the hand.

The second manifestation occurs in disease of the pyramidal tract. The effect of hyperpnea is to exaggerate the symptoms of this disease. The spasticity of the muscles whose corresponding pyramidal elements are injured becomes very much greater. Even when disease of the nerve tract in question is so slight that it is not manifest by the classic signs of Babinski and of Hoffman, the effect of hyperpnea is frequently to bring about the appearance of those signs for the time being, as may be seen from one of the cases to be detailed later.

The three other tetanic manifestations induced by hyperpnea in disease of the spinal cord now remain to be described.

MUSCULAR FIBRILLATION

As is well known, disease of the motor cells in the anterior horns of the gray matter of the spinal cord

1. Ayer, J. B.: Spinal Subarachnoid Block as Determined by Combined Cistern and Lumbar Puncture, Arch. Neurol. & Psychiat. **7**: 38 (Jan.) 1922.
2. Sicard, Haugenan and Laplane: Rev. Neurol. **31**: 1 (Jan.) 1924.
3. Collip, J. B., and Backus, P. L.: Am. J. Physiol. **51**: 568 (April) 1920.
4. Grant, S. B., and Goldman, A.: Am. J. Physiol. **52**: 209 (June) 1920.
5. Davies, H. W.; Haldane, J. B. S., and Kennaway, E. L.: J. Physiol. **54**: 32 (Aug. 19) 1922.
6. Rosett, Joshua: The Experimental Production of Rigidity, of Abnormal Involuntary Movements and of Abnormal States of Consciousness in Man, Brain **47**: 293, 1924.

results in the flaccid paralysis and atrophy of the corresponding muscles. Before the paralysis and atrophy are complete, such muscles exhibit fibrillary twitchings. The effect of hyperpnea on such muscles is to increase the prominence of their fibrillations when they exist, or to make them appear in the early stages of the disease when fibrillary twitchings have not yet set in. In cases of combined disease of the pyramidal tract and of the anterior motor cells, therefore, such as in amytrophic lateral sclerosis, there results during hyperpnea an increase of both the tonicity of the muscles and of their fibrillation. The following instance illustrates this phenomenon:

CASE 1.—*History.*—H. B. was admitted to Mount Sinai Hospital with the complaint of muscular weakness for the last two years. Examination showed a considerable degree

Fig. 1.—Amyotrophic lateral sclerosis; the left hand is only partly clawlike.

of atrophy of the musculature of the left upper limb, especially of the small muscles of the hand, giving the latter a partly clawlike appearance; a relative weakness of the entire left side of the body, and fibrillary twitchings of the musculature, which were well marked in the upper limbs, shoulders and the thorax, and rather slight over the rest of the body and the lower limbs. The tendon reflexes in the upper limbs were of the normal briskness, but were somewhat increased in the lower limbs. There was the sign of Hoffman in the left hand.

Effect of Hyperpnea.—The patient cooperated in the experiment of hyperpnea, the record of which follows:

The patient, whose thoracic musculature appeared to be largely atrophied, breathed fairly deeply at the rate of from fifteen to seventeen a minute.

In three minutes, the muscular fibrillations in the upper limbs, the shoulders and the thorax were very much increased. The fibrillations of the abdominal musculature and of that of the thigh had become more prominent.

In five minutes, the sign of Hoffman was elicitable in the right hand.

In eight minutes, the fibrillations of the entire musculature of the body and the limbs were increased both in frequency and in amplitude, the largest muscles being most at play. The result was that the twitching of the musculature of the thighs, the buttocks and the calves had become more prominent than that of the upper limbs.

In twelve minutes, the right hand had assumed the partial claw form noted of the left before the experiment (Figs. 1 and 2). The forearms were semiflexed at the elbows. The biceps and triceps reflexes were very much exaggerated. The lower limbs were rigid, so that they remained extended when raised by placing a finger behind the knee. When the patellar or suprapatellar tendon was struck while the limb was thus raised, a transient clonus of the entire extremity resulted. The head was retracted and the mouth open. Hyperpnea was discontinued.

The foregoing case of amyotrophic lateral sclerosis illustrates the fact that the only result of hyperpnea in diseases of the motor cells and of the pyramidal tract is to bring about a mere exaggeration of the existent manifestations of this disease. We shall soon have occasion to see how different the case is in other affections of the spinal cord.

MUSCULAR TREMOR

A slight and very transient tremor of the facial musculature not infrequently occurs during the first stages of hyperpnea in presumably normal persons. In the cases of acute encephalomyelitis and meningovascular disease observed in connection with the present study, one of the effects of hyperpnea was the appearance of muscular tremors irregularly distributed in different parts of the body and the limbs. The musculature of the thighs, of the arms and of the cheeks, the orbicularis muscles of the eyes and the mouth exhibited these tremors with especial prominence.

MYOCLONUS

In patients with disease located within the vertebral canal and impinging on the spinal cord or the cauda equina, the form of the induced tetany was specific. When such a patient breathed as deeply as possible at the rate of from twelve to seventeen a minute, myoclonus appeared below the level of the lesion in from two to ten minutes. If the exercise was continued for another few minutes, normal tetany appeared in the musculature above the level of the lesion.

The phenomenon of myoclonus must be carefully distinguished from the phenomena described in the preceding sections; namely, fibrillation and tremor.

The term fibrillation, or fibrillary twitching, signifies a rather slow and strong contraction of small bundles of muscle fibers. The contraction produces narrow grooves when occurring in the arm biceps, the anterior musculature of the forearm, the thenar and hypothenar eminences, the pectoralis major and the deltoid. In other localities, fibrillary contractions assume the form of oval or saucer-like depressions. A fibrillary contraction is hardly ever observed to recur twice in succession in the same place. A number of parts of the same muscle may contract simultaneously, or different parts may contract in succession. In the extremely pronounced instance of muscular fibrillation, in Case 1 during hyperpnea, the contractions of the musculature of the thigh resembled myoclonus, but

Fig. 2.—The same patient after twelve minutes' deep breathing; the "abnormal" form of tetany in the hands and face is due to the muscular atrophy.

were easily distinguished by the fact that they appeared now in one part of the musculature, now in another, and never twice in succession in the same place. The rate of fibrillary contractions is altogether indefinite. Several parts of a muscle may contract in rapid succession, or the contraction of a muscle bundle in one place may be followed by a similar contraction of a muscle bundle in another place only after an interval of some seconds.

Muscular tremor, as it occurs during hyperpnea, causes a rapid vibration of the overlying skin. The amplitude of the vibratory movement is seldom above 3 mm. Such tremors occur in muscles that have become hypertonic as a result of the exercise in question. The greater the muscular tonicity, the more

rapid is the vibratory movement and the smaller is its amplitude. When such a muscle has become palpably rigid, therefore, the tremor fades out and disappears.

The myoclonus that occurs during hyperpnea in patients affected with compression of the spinal cord or of the posterior nerve roots appears most prominently in the large musculature of the thigh, the buttocks and the hips. It is a massive contraction of entire muscles repeated at the rate of from four to eight a second. The contraction and relaxation of each individual muscle bears no relation to similar contractions and relaxations of the other muscles involved. Since the movement of a limb is conditioned by the contraction of a certain group of muscles and the simultaneous relative relaxation of the antagonistic group, movement of a limb as a result of the myoclonus described does not occur except accidentally; that is to say, when the contraction of a certain muscle happens to coincide in point of time with the relaxation of its antagonist.

Outside the thigh, the buttock and the hip, the clonus has been observed in the musculature of the abdomen, thorax, shoulders, neck and arm. I have not seen it in the musculature of the leg, foot, forearm or hand.

The first appearance of the muscular clonus is like that of a slow tremor. With the continuation of the exercise it continues to increase in amplitudes until, in pronounced cases, it becomes a large contraction-relaxation movement of a number of muscles, the movements of each muscle being entirely out of time with the similar movements of the other muscles. The clonus is permanent; that is, it continues throughout the exercise of hyperpnea.

In a certain number of instances, when the appearance of the clonus in suspected cases was tardy, it was evoked by striking the finger placed on the suprapatellar tendon. The clonus described then appeared and continued throughout the exercise.

The action of the bromids and of caffein on the tetanic state induced by hyperpnea has been described by me in the general study of the subject referred to. The action of the one drug is to diminish, that of the other to increase the prominence of the manifestations. The administration of 15 grains (1 gm.) of caffein citrate in one of the cases to be described subsequently had the effect of bringing about the appearance of the clonus after it had disappeared, owing to some improvement in the condition of the patient.

The upper level of the muscular clonus that occurs during hyperpnea in extramedullary disease has not been definitely outlined. The propagation of a skin wave, as a result of the repeated large movement of the underlying muscles, makes such delineation difficult. On the whole, that level was found to coincide with the highest portion of the cord affected. In nearly all the cases studied, hyperpnea was continued for some time after the muscular clonus had become very pronounced. The sustained tetany which then appeared in the hands and face served, in a way, as a control, showing that the parts thus affected were innervated by a portion of the neuraxis above the level of the lesion.

There is, of course, no reason why myoclonus may not occur together with a tremor and fibrillations. The simultaneous occurrence of the first two has indeed been observed in two of the cases to be described. Throughout the large number of experiments in different disorders of the nervous system, myoclonus was never seen in diseases which originate in and which remain limited to the tissue of the spinal cord. In myelitis of different grades of severity, in syringomyelia, in tumors affecting the tissue of the cord and limited to it, in amyotrophic lateral sclerosis, in anterior poliomyelitis, in multiple sclerosis, in tabes dorsalis, in Friedreich's ataxia, in syphilis, the neuromuscular phenomena produced by hyperpnea were numerous and varied, but myoclonus of the kind described was not one of them.

The following cases are advanced in order to show both the diagnostic value of the sign of induced tetanic myoclonus and the manner in which the bewildering symptomatology of spinal cord disease tends to confuse and mislead the general medical practitioner as well as the neurologist and the surgeon.

CASES TESTED BEFORE OR AFTER OPERATION IN WHICH THE SIGN OF INDUCED TETANIC MYOCLONUS WAS PRESENT

CASE 2.—*History.*—M. J., a woman, aged 58, had been examined a number of times in the last ten years by Dr. Israel Strauss, whose detailed records illustrate in a striking way the manner in which the course of an operable extramedullary tumor may simulate multiple sclerosis. The following are some of the salient features of these remarkable records:

Dr. Strauss was first consulted by this patient in 1914. For seven years previous to that she had been suffering from what was diagnosed as a neurosis of the bowel, the disorder consisting in frequent movements whenever she happened to be away from home. From 1909 until 1912, she had pains in the spine. Since July, 1913, she had noticed some weakness of the left foot.

Examination revealed the tendon reflexes hyperactive. The abdominal reflexes were absent. There was no ankle clonus, no sign of Babinski and no ataxia. The left foot was slightly dropped. The sensations of touch and pain were diminished over a small area on the lower outer aspect of the left leg. The sense of pain was markedly diminished over the right leg, thigh and the right lower part of the abdomen. Posteriorly, this area of hypalgesia was limited above by the ninth thoracic vertebra. The sixth, seventh, eighth and ninth thoracic vertebral spines were painful when pressed on by the finger. The spinal fluid was under slight pressure, and contained 6 cells and globulin + +. The Wassermann reaction was negative.

Dr. Strauss made the diagnosis of extramedullary tumor; but, as the patient improved after the spinal puncture to the extent of regaining the power of movement of the left toes, he preferred to wait before advising an operation. She continued to improve, indeed, so much so that when he reexamined her in March, 1915, no sign of any disease could be detected. A month later, however, there was a rather sudden exacerbation of the symptoms. The right anterior tibial muscles became so weak that she could hardly move her toes. The Achilles reflex on this side could not be elicited, and plantar stimulation tended to produce dorsiflexion of the great toe. There were some sensory disturbances, but their nature and distribution were so indefinite that it was impossible to make any deduction regarding either the localization or the number of lesions in or about the spinal cord. In August of the same year, slight bilateral foot drop appeared. The left patellar reflex was greater than the right; there was a slightly marked sign of Babinski on the right side; the abdominal reflexes were once more absent. She complained of occasional pains in the lower part of the spine.

In November, 1915, her feet were markedly dropped, and the Achilles, plantar and abdominal reflexes could not be elicited. There was a zone of hyperalgesia between the seventh and twelfth ribs.

By January, 1916, the sensory disturbances completely disappeared. By May, there was a great improvement of the motor disabilities. Some months later, however, the sign of Babinski reappeared on the right side, the right patellar reflex was once more abnormally brisk, and the area of hypalgesia over the right lower abdominal quadrant reappeared. She complained of pains about the waist, which radiated down the lower limbs.

Reexamination in July, 1917, showed a great and general improvement in the patient's condition. She had gained in weight. The motor disabilities were slight; the reflexes were normal.

During the succeeding six years, the disease was characterized by the remissions and exacerbations of the symptoms as described above. Early in 1924, she suffered for some months from pains in the pelvis radiating down the lower limbs, and was treated by her family physician for sciatica. Early in the summer of this year she was annoyed for a number of weeks by frequent micturition, for the relief of which hexamethylenamin was administered. Her legs suddenly became very weak, so that they occasionally gave way under her. Dr. Strauss was again consulted. He found the tibial and peroneal muscles partially atrophied. The right patellar reflex was absent. There was a diminution of all forms of sensation from Poupart's ligament all the way down. Puncture in the third lumbar space failed to produce any fluid. The puncture was repeated in the second lumbar space, from which 1 c.c. of a yellow fluid was obtained. Extramedullary tumor was finally diagnosed and an operation was decided on.

Effect of Hyperpnea.—The patient was tested for tetanic manifestations. Following is the record:

The patient breathed fairly deeply at the rate of thirteen a minute.

In three minutes, there was an appearance of a slow tremor of the anterior musculature of the left thigh.

In six minutes, there was a muscular tremor in the anterior musculature of the right thigh. The tremor of some of the muscles of both thighs had increased until it was distinctly a myoclonus. In other muscles, however, the slow tremor persisted.

In eight minutes, myoclonus was very pronounced and was limited to the anterior musculature of the thighs. It appeared to be superimposed on a muscular tremor. The hands of the patient were becoming rigid in the normal tetanic posture. Hyperpnea was discontinued.

Subsequent History.—The next day this patient was operated on by Dr. Neuhoff in the private pavilion of Mount Sinai Hospital. A cyst about 2 inches (5 cm.) in length was found overlying the lowest portion of the spinal cord and the cauda equina. Traced upward, it was found to originate in a fine pedicle which was attached to the spinal cord. The tumor was removed with comparative ease.

CASE 3.—*History.*—M. E., a man, aged 40, was admitted to the neurologic wards of Mount Sinai Hospital in the service of Dr. Sachs, in February, 1924. For the last four years he had suffered, particularly at night, from pain and stiffness of the neck and, recently, from a sensation of tingling and numbness of the fingers.

Examination showed hyperalgesia over an area included between the upper limit of cutaneous distribution of the second cervical nerve above and the lower limit of cutaneous distribution of the fourth thoracic nerve below. The sense of pain was defective over the area of cutaneous distribution of the fourth and fifth sacral nerves. The patellar and Achilles reflexes were somewhat hyperactive. There was an indefinite Horner's syndrome on the right side. The spinal fluid was clear, of a light yellow tinge, and contained 1 cell. The Wassermann reaction was negative.

The patient improved somewhat after a stay in the hospital and was discharged. He was readmitted in June. The pain about the neck had become of a burning character and radiated to the shoulders and arms. He suffered, besides, from a dull pain around the abdomen and waist. The physical signs were the same as on the previous admission. A laminectomy was decided on.

Effect of Hyperpnea.—The patient submitted to voluntary hyperpnea, with the followings results:

After breathing deeply for five minutes, a sudden powerful clonus appeared in the separate muscles of the right thigh, which spread with great rapidity to the opposite side and upward. Half a minute later, the entire musculature of the thighs, hips, abdomen, thorax, neck and shoulders was convulsed. The voluntary exercise ceased automatically, but the muscular clonus continued to increase in violence for a number of seconds. A few irregular movements of the lower limbs and of the body as a whole were executed, and there appeared a tremor of the platysma at its attachment to the lower part of the face.

Subsequent History.—Two days later, the patient was operated on by Dr. Ellsberg, who found a tumor in the vertebral canal impinging on the right side of the spinal cord between the second and fourth cervical vertebrae. The growth was easily removed.

CASE 4.—*History.*—S. P., a woman, aged 37, was admitted to Mount Sinai Hospital in February, 1920, complaining of pain in the right lower limb, headaches, insomnia, dizziness, fainting spells and occasional attacks of diplopia. Examination revealed a partial drooping of both upper eyelids, some weakness of the left abducens muscle, exaggerated tendon reflexes, a tremor of the hands, slight rigidity of the neck, and the sign of Kernig. The lower right abdominal quadrant and the right lower limb were tender to pressure. The diagnosis was made of encephalitis with symptomatic sciatica. She improved under treatment and was discharged.

She was readmitted in February, 1924, complaining of pain in the right side of the pelvis and the right lower limb. The spinous processes of the second and third lumbar vertebrae were tender to pressure. There were no other objective sensory disturbances. The spinal fluid was of a light yellowish tinge and contained globulin + + +. She improved after three epidural injections and was discharged.

She was admitted a third time in June, 1924. Previous to her admission to the hospital, her sciatic nerve had been stretched, without relief of the pain from which she suffered. Examination failed to reveal any objective sensory abnormalities, and the only symptom of disease was a persistent pain in the right lower limb.

Effect of Hyperpnea.—I was accorded the privilege of testing this patient for the manifestations of tetany. Following is the record:

The patient cooperated well. There was fairly deep breathing at the rate of from twelve to fourteen a minute.

In four minutes, a slow, coarse tremor appeared in the right thigh muscles, which rapidly assumed the form of a clonus.

In five minutes, the large muscular clonus had spread to the right hip, buttock and lower portion of the abdomen.

In six minutes, the clonus was very violent and was entirely limited to the musculature of the right thigh, buttock, hip and lower portion of the right side of the abdomen. The patient complained of discomfort. Hyperpnea was discontinued.

Subsequent History.—The next day spinal puncture was done at three points. That between the first and second and the second and third lumbar vertebrae gave negative results; from the interspace between the third and fourth vertebrae, a deep yellow fluid was obtained. An operation was then decided on.

Dr. Ellsberg performed a laminectomy of the second, third, fourth and fifth lumbar and the first sacral vertebrae. A soft tumor about 1 inch (25 mm.) long was discovered among the roots of the cauda equina on the right side, apparently attached to the third lumbar nerve root. It was removed.

CASE 5.—*History.*—E. K., a woman, aged 53, complained in 1914 of a sense of weight in the lower limbs. A laminectomy performed at the level of the sixth thoracic vertebra revealed a tumor on the outside of the spinal cord, which was removed. In 1918, the sensation of weight in the lower limbs returned; it was attributed by her physicians to a neurosis, and she was treated accordingly. In 1924, she came under Dr. Wechsler's care. He found a spastic gait, hyperactive patellar and Achilles reflexes, ankle clonus, the sign of Babinski on both sides, and the absence of abdominal reflexes. The sensations of vibration and of position were defective in the lower limbs, and the spinous process of the fourth thoracic vertebra was tender to pressure. He recommended an operation on the spine, which was performed by Dr. Ellsberg at Mount Sinai Hospital. A tumor was found overlying the spinal cord on the posterior aspect at the level of the sixth thoracic vertebra and was removed.

Effect of Hyperpnea.—Eight days after the last operation, I was enabled to test this patient for tetanic manifestations with the following results:

One minute after the beginning of deep breathing, a strong convulsive movement of the separate muscles of the right thigh and buttock appeared. In another two minutes the myoclonus spread to the opposite limb, the abdominal and the lower intercostal muscles, being limited by a line drawn around the body at the level of the ensiform cartilage.

CASE 6.—*History.*—J. S., a woman, aged 30, admitted to the Montefiore Hospital in March, 1924, had had an abscess about the external genitalia, four months before, which was incised and drained. The operation was followed by chills, fever and severe pains in the lumbar region, the epigastrium and the right shoulder. At the end of December, 1923, her lower limbs became so numb and weak that she could not walk without assistance. She was admitted to Mount Sinai Hospital, where a laminectomy of the fifth, sixth, seventh and eighth thoracic vertebrae was performed for drainage of a spinal abscess.

On admission to the Montefiore Hospital, in March, 1924, her lower limbs were paralyzed and spastic, with increased tendon reflexes and the sign of Babinski. Below the tenth thoracic segment, all forms of sensation were very much diminished. Above that level there was a belt of hyperalgesia, whose upper margin was formed by the second thoracic segment in front and the fifth behind. She had no control over the sphincters. The fistula at the site of the operation continued to drain pus.

Effect of Hyperpnea.—During the months of April and May, 1924, this patient submitted to the test of voluntary hyperpnea a number of times, and her ready cooperation enabled me to demonstrate the tetanic manifestations to a number of interested physicians. The phenomenon of myoclonus was very pronounced, and appeared with great uniformity on every occasion except one, to be mentioned later. Following is one of the records:

The patient breathed deeply and with good force at the rate of from thirteen to fifteen a minute.

In three minutes, the musculature of the thighs, buttocks and hips was affected by a slow tremor, which rapidly became a clonus of large amplitude. The rate of the clonus was about four a second. There was no cooperation between the muscles involved in the clonus; each contracted and relaxed entirely out of time with the similar contractions and relaxations of the other muscles.

In six minutes, the clonus extended to the lower abdominal musculature, but its line was not distinctly limited and it faded out a little above the umbilicus.

In eight minutes, the hands and the face were set in normal tetany; the head was retracted in opistrotonos. Hyperpnea was discontinued.

On one occasion, hyperpnea was continued until the setting in of normal tetany in the hands and face without the appearance of myoclonus. On investigation, a general improvement in the condition of the patient was found. Sensation in the lower limbs was less blunted and she could move the toes. Fifteen grains (1 gm.) of caffein citrate was administered. When the patient was subjected to hyperpnea one hour later, the myoclonus appeared as on former occasions with even greater force. On subsequent occasions the appearance of myoclonus, whenever it was delayed, was expedited by striking the finger placed over the suprapatellar tendon with a percussion hammer.

CASE 7.—*History.*—J. S., a man, aged 53, had undergone an operation for hemorrhoids in 1922, following which urination became difficult and he began to suffer from pains in the lower limbs. In September, 1923, he was operated on by a laminectomy of the second, third and fourth lumbar vertebrae, with negative findings. The pain in the lower limbs continued to increase in severity, and urination became so difficult as to necessitate systematic catheterization.

He was admitted to Mount Sinai Hospital in February, 1924. He had a moderate degree of general arteriosclerosis and an arcus senilis. The left pupil was slightly larger than the right, and both were somewhat irregular. The lower limbs were spastic, with weakness of the anterior tibial and peroneal muscles. The left abdominal reflexes were livelier than the right. The Achilles reflexes were hyperactive; there was a clonus at the ankles, and the sign of Babinski on both sides. All forms of sensation were diminished below the third lumbar segment, and there was a belt of hyperalgesia corresponding to the sixth and seventh thoracic segments.

Effect of Hyperpnea.—Following is the record of the test for the presence of myoclonus:

The patient breathed fairly deeply at the rate of from twelve to fourteen a minute, but did so under protest. He stopped every few minutes and had to be coaxed repeatedly into resuming the exercise.

In thirteen minutes, a coarse tremor appeared in the musculature of the thighs, buttocks and hips. The tremor became a myoclonus of large amplitude, which was more prominent on the right side.

In eighteen minutes, the left lower limb vibrated as a whole for about two minutes. The myoclonus extended to the musculature of the abdomen, thorax, shoulders and the inner side of the arm.

In thirty-two minutes, there was no change in the myoclonus. The hands were in the normal tetanic posture.

Subsequent History.—In March, 1924, Dr. Ellsberg performed a laminectomy of the seventh, eighth, ninth, tenth, eleventh and twelfth thoracic vertebrae. Varicose veins were found on the posterior surface of the cord.

CASE 8.—*History.*—H. R., a man, aged 61, was admitted to Mount Sinai Hospital in July, 1924. In 1923, a laminectomy of the eighth, ninth and tenth thoracic vertebrae had been performed by Dr. Linder, who removed a cysticercus from the vertebral canal. On admission, there were the following symptoms: a slight degree of papilledema; diminished abdominal reflexes; partial spastic paralysis of the lower limbs, with increased tendon reflexes and the sign of Babinski; partial anesthesia from the twelfth thoracic segment all the way down, and a belt of hyperalgesia corresponding to the four highest thoracic segments. The spinal fluid was yellowish, and contained 17 cells. The Wassermann reaction was negative. The diagnosis was made of one or more cysts in the vertebral canal and perhaps also in the cranial cavity. The patient refused an operation.

Effect of Hyperpnea.—He was subjected to voluntary hyperpnea with the following results:

In three minutes, a tremor of the abdominal musculature was seen only during expiration. A little later the tremor assumed the amplitude of a clonus.

In five minutes, a very slow clonus (only a single contraction about every two seconds) of the triceps muscles appeared and was more prominent on the left side.

In ten minutes, the triceps clonus was increased in amplitude, but its rate was the same as before. There was a movement of the posterior musculature of the left forearm and of the anterior musculature of the right forearm, but it was impossible to decide whether it was a fibrillation, a tremor or a clonus.

In fifteen minutes, the clonus of the abdominal musculature was barely perceptible. The triceps clonus had become more prominent. There was normal tetany in both hands. The movement of the forearm musculature was seen to be definitely a fibrillation. Exercise was discontinued.

TWO CASES OF SPINA BIFIDA OCCULTA

CASE 9.—*History.*—M. C., a girl, was 15 years of age when she was admitted to the Montefiore Hospital, in 1922. Owing to the disability of the lower limbs and to fecal and urinary incontinence, she was largely bedridden at the time I examined her. The upper part of the body and the upper limbs were normal. The left lower limb was a little shorter than the right. The patellar reflexes were hyperactive, while the Achilles reflex, owing to the tenotomy she had undergone, was absent on both sides. There was a sign of Babinski on the right side. The cutaneous area innervated by the fourth and fifth sacral nerves was anesthetic. Over the lower lumbar and sacral region, scars were visible—the results of operations performed in infancy and childhood for the relief of the patient's condition.

Effect of Hyperpnea.—In five minutes, a coarse and slow tremor of the musculature of the thighs appeared. The tremor soon became a clonus.

In eight minutes, a fine rapid tremor of the legs appeared. The clonus of the thigh musculature continued.

In fifteen minutes, there was no change. The patient complained of a sensation of tingling and numbness in the hands—a frequent sign of the beginning of normal tetany. Hyperpnea was discontinued.

CASE 10.—*History.*—N. N., a woman, aged 39, was admitted to Mount Sinai Hospital in June, 1924, complaining of pain in the left side of the abdomen and a loss of the sensations of heat and cold in the right lower limb. Physical examination showed the right pupil to be larger than the left, a slight flattening of the left side of the face, a tremulous tongue which deviated to the left, an absence of the left lower abdominal reflex, hypalgesia and thermanesthesia on the right side below the twelfth thoracic segment, and a zone of hyperalgesia between the tenth and twelfth thoracic segments. Muscular power was normal. The spinous process of the ninth thoracic vertebra was absent. The patient had never undergone a surgical operation.

Lumbar puncture produced a normal fluid. Following the puncture there was a considerable improvement in the sensory disturbances, both subjective and objective.

Effect of Hyperpnea.—The result of ten minutes' hyperpnea was a myoclonus of small amplitude of the entire musculature of both thighs, which became very much greater on striking the finger placed on the suprapatellar tendon.

CASES TESTED BEFORE OPERATION IN WHICH THE SIGN OF INDUCED TETANIC MYOCLONUS WAS ABSENT

CASE 11.—*History.*—C. P., a woman, aged 24, complained of weakness of the legs and feet. Physical examination in September, 1922, showed the presence of the sign of Romberg, spasticity of the lower limb, hyperactive patellar, suprapatellar and Achilles reflexes, ankle clonus and the sign of Babinski on both sides.

Effect of Hyperpnea.—There was a great exaggeration of the symptoms of disease of the pyramidal tract. Myoclonus or any other muscular movement was completely absent.

Subsequent History.—About a year later, in addition to the motor defects, sensory disturbances appeared, consisting of pain in the middle of the spine, in the shoulder and down the ulnar borders of the forearms. A belt of hyperalgesia was found between the second and sixth thoracic vertebral spines behind, and between the first and fourth ribs in front. The second, third and fourth thoracic vertebral spines were tender to pressure.

A laminectomy of the second, third, fourth and fifth thoracic vertebrae was performed. No abnormality was found. The disease turned out to be multiple sclerosis.

CASE 12.—*History.*—G. F., a powerfully built man, aged 23, complained of stiffness and weakness of the right upper limb for a period of five months. The musculature of the right arm and forearm was spastic, and the biceps and deltoid muscles affected by occasional fibrillations. He could not raise this arm above an angle of 30 degrees, nor could he flex the forearm at the elbow beyond a right angle. Over a large area of irregular outline on the right shoulder, the sensations of pain and of temperature were absent. He complained of vague pain about the right side of the neck and the right shoulder radiating down the arm. In every other respect, he was normal.

Effect of Hyperpnea.—Following is the first record of the exercise of hyperpnea:

In two minutes, there was a singular grinding movement of the lower jaw.

In five minutes, the upper right limb had become very rigid, strongly pronated, the thumb adducted, the palm of the hand flattened, the index and little fingers extended, and the others completely flexed at all joints. A sign of Babinski had appeared in the right foot.

In seven minutes, the fibrillary twitchings of the right biceps and deltoid muscles had become more frequent, and the grooves formed deeper. The rigidity of the upper right limb was intense. The left hand was slightly tetanized in the normal posture.

A week later this patient was again examined. The rigidity and weakness of the upper right limb had increased and the neck, in addition, was slightly rigid. The pains were as vague and inconspicuous as before. The effects of voluntary hyperpnea remained the same.

He was seen a third time two weeks later. All the former symptoms were more pronounced and he had, in addition, a sign of Babinski on the side on which it had been elicited only during the exercise of hyperpnea on previous occasions. The manifestations of tetany induced by hyperpnea remained the same.

Subsequent History.—The next day this patient was operated on by a laminectomy of the third, fourth, fifth and sixth cervical vertebrae. No disease was found. Post mortem, a neoplasm infiltrating the substance of the highest portion of the spinal cord was found.

CASE 13.—*History.*—A. W., a woman, aged 27, during the entire year of 1922 suffered from pain in the highest portion of the spine, which radiated down the upper limbs. Several weeks before she was seen by me, in June, 1924, the pain reappeared and was so severe that she held the neck and upper portion of the body rigidly fixed, the slightest movement causing her great suffering. The right side of the face was slightly flattened, the musculature of the right shoulder was somewhat atrophied. The upper right limb was weak and ataxic. The sign of Hoffman was present in both hands. The left pectoralis major was affected by a myoclonus repeated at the rate of once every five or six seconds, and more frequently on the least exertion or excitement on the part of the patient. The tendon reflexes were normal. All forms of sensation were blunted over the area innervated by the fourth and fifth cervical segments on the right side, while the area on the same side innervated by the cervical segments above that was hyperalgesic.

Effect of Hyperpnea.—In two minutes, the existing clonus of the left pectoralis major had increased.

In four minutes, when the patellar or suprapatellar tendon was struck with the percussion hammer, a strong affective reaction resulted; both lower limbs were raised with a rapid vibratory movement for about half a second.

In eight minutes, the clonus of the left pectoralis muscle was more pronounced. There was no tremor or clonus anywhere else. The affective reaction described was more pronounced.

Subsequent History.—A laminectomy was performed. A tumor slightly protruding from the substance of the cord, not removable, was found at the level of the second cervical vertebra.

PHYSIOLOGIC SIGNIFICANCE OF MYOCLONUS AS A TETANIC MANIFESTATION IN THE CASES DESCRIBED

If we turn our attention from the fact of the occurrence of myoclonus in the cases described to the reason for its occurrence, we are confronted by a problem that cannot be satisfactorily solved in the present state of our knowledge of the anatomy and physiology of the central nervous system.

One of the conclusions arrived at in the general study of the tetanic state induced by hyperpnea [6] is that the resulting neuromuscular phenomena are due to a diminution of cerebral functioning, particularly a diminution of functioning of the cerebral cortex. The effect of such a diminution of cerebral functioning is a release of muscle tonus from the brain stem and the spinal cord.

One of the conditions for the production of muscle tonus is the intactness of the proprioceptive pathways. Sherrington's [7] well known experiment proves that the severance of the proprioceptive nerves that pass from

7. Sherrington: Quart. J. Exper. Physiol. 2: 109, 1909.

the muscles into the spinal cord abolishes the tonicity of the decerebrate muscle.

From the description of the cases, it will appear that the tumor was located on the posterior aspect of the cord, on the side, or in the highest part of the cauda equina. There was therefore in these cases a compression of the posterior nerve roots. These roots contain the proprioceptive nerves whose origin is in the muscles. It is not difficult to conceive that when these fibers are pressed on, the conduction of impulses along them becomes intermittent. Instead of a sustained hypertonus which occurs in the tetanic state under normal conditions, the hypertonus in the abnormal cases described was intermittent, thus causing the succession of muscular contractions and relaxations known as myoclonus. The pressure on these pathways in the posterior columns of the spinal cord may in the same manner account for the fact that a lesion in the cervical region results in myoclonic contractions of the entire musculature below the level of the lesion. The absence of myoclonus, under the conditions described, in the leg, foot, forearm and hand may be due to special causes, on the nature of which we cannot even speculate.

CONCLUSIONS

1. The manifestations of tetany induced by voluntary hyperpnea are different in different diseases of the spinal cord.

2. In diseases limited to the tissue of the spinal cord, tetany manifests itself by a great exaggeration of the signs and symptoms that characterize the disease of the particular constituents of the spinal cord involved.

3. In meningovascular disease of the spinal cord, one of the manifestations of the tetanic state is the appearance of irregularily distributed rapid muscular tremors.

4. In disease located within the vertebral canal which impinges on the posterior nerve roots or the posterior or lateral portions of the spinal cord, the tetanic state induced by hyperpnea manifests itself by the appearance of myoclonus below the level of the lesion.

5. The absence of induced tetanic myoclonus points against the advisability of surgical intervention, especially in the presence of other manifestations of tetany.

6. Although certain extramedullary affections cannot be relieved by surgical interference, a great number can be. The appearance of myoclonus as a manifestation of induced tetany points, therefore, to the advisability of a surgical operation.

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Experimental Method in Medicine.—The tendency in modern medicine is unhappily threatening to go astray. The methods of experiment, necessary though they are to all right and rapid progress, have been given an undue relative importance and have been regarded as the chief, or even the only, means by which truth can be discovered or established. In the physical sciences, observation, hypothesis and experiment are perhaps the whole story; and of chemistry, which seems more and more to become a province of physics, the same is true. In other sciences, experiment may play no great part, our knowledge being chiefly gained by observation, and by a steady, if slow, progress from individual and isolated truths to a universal law. Of such, geology is perhaps the best example. In medicine there should be a close confederacy between observation and experiment; but in observation there lie difficulties far greater than in any other science, and in experiment we may often argue only by an analogy. . . . The highest form of the experimental method in medicine is that which surgery offers.—Moynihan, Sir Berkeley: Relation of Medicine to the Natural Sciences, *Lancet* **1**:116 (Jan. 17) 1925.

A SPECIFIC PRECIPITIN REACTION IN EPIDEMIC POLIOMYELITIS*

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The hypothesis that a streptococcus having peculiar neurotropic and other properties might have etiologic relationship to epidemic poliomyelitis was formulated on the basis of certain extremely specific effects noted during my studies on focal infection and elective localization in other diseases. In 1916, I first demonstrated the presence of a streptococcus having peculiar neurotropic properties in infection atria and brain and cord in a series of cases of poliomyelitis. It has since been demonstrated consistently in sporadic cases, and in a large number of cases in various epidemics. Through agglutination tests and intracerebral inoculation of rabbits with dilute suspensions of swabbings from the nasopharynx, I demonstrated its presence during the epidemic of poliomyelitis that occurred in and about Rochester in 1921, not only in persons suffering from severe and abortive attacks, but also in normal contacts and in persons not exposed to the disease. Moreover, it was proved absent one year later in all but three of forty-four persons, in all of whom it was found to be present during the epidemic.

In a clinical study of poliomyelitis, I have been impressed by the almost constant presence of active hyperemia of the mucous membrane of tonsils and nasopharynx, which varies in intensity in epidemics and in different parts of the same epidemic, although it rarely gives rise to subjective symptoms. Careful examination of the throat usually reveals the presence of a distinctly turbid, loosely adherent, grayish-white exudate in the nasopharynx, often not visible until the patient is made to gag.

The isolation and identification of the streptococcus is difficult and time-consuming, for its morphology and cultural characteristics are not wholly distinctive, and it tends to lose specific infecting and agglutinating properties on artificial cultivation. Inoculation of animals with material directly from infection atria or with partial tension cultures therefrom and immunologic study of the strains isolated from the animals are usually necessary for its isolation. The need for a simple test to determine the presence or absence of this organism is therefore apparent.

For several years I have used the precipitin reaction, together with agglutination tests, in the differentiation of streptococci which culturally and morphologically are very similar. It occurred to me that possibly a precipitin reaction in poliomyelitis might be obtained by layering the cleared extract of nasopharyngeal washings or swabbings over the antistreptococcus horse serum used in the treatment of poliomyelitis. The first opportunity to test this idea presented itself in four typical cases of poliomyelitis that occurred near Rochester between Sept. 20 and Oct. 5, 1924. The reaction was positive with the antipoliomyelitis horse serum in each case, but negative with normal horse serum and various immune serums used as controls.

TECHNIC

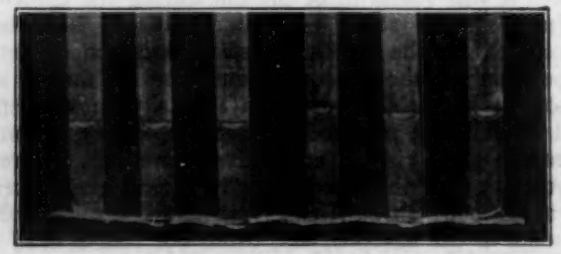
The test is very simple, and consists of layering the extract in sodium chlorid solution of nasopharyngeal swabbings over the respective serums in small tubes,

* From the Division of Experimental Bacteriology, the Mayo Foundation.

and noting the presence or absence of a cloud at the point of contact.

We have found tubes similar to those used by Hektoen in his precipitin experiments very satisfactory. They are made from thin-walled glass tubing with an inside diameter of from 3 to 3.5 mm., cut into lengths of 3.5 cm. and sealed at one end in a hot Bunsen flame. The capillary pipet used in adding the extract and serum is made from glass tubing of the same size, the capillary end being drawn to approximately 0.5 mm. outside diameter.

The swabs used are made by wrapping absorbent cotton around the flattened end of a wire, preferably of aluminum, approximately 1.5 mm. in diameter, and bent to an angle of about 60 degrees. It is essential that the swabbing be obtained high in the nasopharynx, and uncontaminated by contact with the tongue. We have learned a little trick for getting the swab into the nasopharynx before the patient gags: having the patient breathe through the nose, and depressing the tongue only slightly. The swab is immediately placed in 2 c.c. of sodium chlorid solution or 0.2 per cent. gelatin Locke solution, and thoroughly agitated. The cotton is then removed from the wire with forceps, and as much as possible of the absorbed fluid is expressed by wrapping the cotton around the end of



A precipitin experiment: Tubes 1, 2 and 3 (from left to right) illustrate a mildly positive reaction (+), while the control tubes, 4, 5 and 6, are negative. Tubes 1 and 2 contain immune poliomyelitis horse serum; Tube 3, immune encephalitis serum; Tube 4, serum from a horse immunized with a green-producing streptococcus isolated in chorea; Tube 5, serum from a horse immunized with hemolytic streptococci isolated in septic infections, and Tube 6, serum from a normal horse. The antigen in each tube is the sodium chlorid solution extract of the nasopharyngeal swabbings of a group of children in the epidemic zone who reacted positively.

the forceps while pressing it against the mouth of the tube. The mixture is cleared by placing it in narrow centrifuge tubes, and centrifugalizing at high speed.

The cleared extract is added with the capillary pipet by placing the end in the bottom of the tube and allowing enough of the solution to flow in to form a column about 1 cm. in height. An equal amount of serum is then added, the pipet again being plunged to the bottom of the tube, placing the serum beneath the extract. A single pipet is used for adding both extract and serum; it is rinsed three times with sterile sodium chlorid solution between each different extract and serum. The use of the capillary pipet is essential, as it secures a relatively slow rate of flow which can be readily controlled, and because a larger pipet causes too much mixing of extract and serum at the layer of contact. It is, of course, essential that the extracts and serums be water-clear, or only slightly opalescent to transmitted light.

The tubes are incubated for two hours, when a reading is taken. They are then placed in the refrigerator over night, after which a second reading is made. Proper illumination in making the readings is essential, and is best accomplished in a darkened room by transmitted light from below the shade of a strong electric light (a frosted bulb of from 75 to 100 watts), the eye being directed toward a dark background. The absence of a cloud at the point of contact is recorded as a negative reaction, a slight cloud as +, a moderately heavy cloud as + +, a heavy, slightly granular cloud as + + +, and a heavy cloud with precipitation as + + + + (shown in the accompanying illustration.) It is seldom that a stronger reaction than + + is obtained with nasopharyngeal extracts. Various dilutions of the serum were tried; a dilution of 1:5 of the poliomyelitis serum often gave positive results, but the undiluted serum gave the best results. The results recorded in the tabulation were obtained with undiluted serum. The serums were all prepared by repeated intravenous injections of the respective streptococcus strains into horses over a long period (from one to three years). Specificity was maintained by animal passage, or by making dense suspensions in glycerin (two parts) and 25 per cent. sodium chlorid solution (one part) of the freshly isolated organisms. For routine work, at least two different samples of the antipoliomyelitis serums and one sample of my antiencephalitis serum (prepared with a similar streptococcus) were used, and for controls normal horse serum and the serum from a horse immunized with hemolytic streptococci from septic infection. In some instances, other antistreptococcus horse serums were included, such as those prepared during the last seven years by the injection of the poliomyelitis streptococcus; one prepared in 1919 with the green-producing streptococcus from epidemic influenza; one recently prepared with a green-producing streptococcus from chorea; one prepared six and one-half years ago with hemolytic streptococci from scarlet fever, and several antistreptococcus serums obtained on the market. In other instances, the effect of serums secured from patients during the acute stage and when convalescing from poliomyelitis was also tested.

RESULTS

Through the splendid cooperation of the health department and the medical profession of Detroit, I have been able to apply this test in a large number of cases of epidemic poliomyelitis and poliomyelitis contacts.[1] Moreover, many control tests have been made on persons suffering from miscellaneous diseases, and on normal persons, both inside and outside epidemic zones. The accompanying tabulation illustrates the results obtained.

The data in the tabulation speak for themselves. A positive reaction was obtained during the early stages of the disease in every undoubted case of epidemic and sporadic poliomyelitis, and in what were considered abortive attacks. In some of these it was slight, and could easily have been missed if illumination had not been strong enough, or if too much mixing at the point of contact occurred in adding the serum. All of the seventeen negative tests were obtained in patients five days or more after onset of symptoms. Positive reactions were obtained repeatedly in some cases, and for as long as forty-four days after onset of symptoms, whereas no positive reactions were obtained in the cases of seven persons who had had poliomyelitis from three months to twelve years previously. In most instances, however, the test was negative after twenty-one days

1. I am especially indebted to Dr. R. W. Preyer for making available to me the facilities of the laboratory of the Herman Kiefer Hospital, and Drs. Harry L. Clark, J. C. Montgomery and B. Burnbaum for assistance in securing material. It is hoped that others may use this test. Sufficient serum for diagnostic tests is available and will be sent on request to any one having opportunity to use it.

from onset. A late positive reaction was repeatedly obtained in children having a persistent slight fever, attributable to infected tonsils and adenoids. Two persons, both in families in which one other member had previously been stricken, developed severe attacks of poliomyelitis and three abortive attacks within a week after a positive precipitin reaction was obtained with swabbings from the throats of each. Positive reactions were obtained with material swabbed or expressed from tonsils, with nasopharyngeal washings, with the chocolate-colored vomitus in a rapidly fatal case, and in one instance with a filtered extract of the stool. Tests with swabbings from the anterior part of the mouth, saliva, spinal fluid, blood serum and urine were always negative. Positive reactions were obtained with pooled convalescent poliomyelitis serum (all obtained within twenty-one days of onset) in eight of eighteen cases of poliomyelitis, in two of eleven cases of scarlet fever, and in eighteen of fifty-four normal persons in the epidemic zone; while only negative reactions were obtained on twenty-one persons with scarlet fever, and forty-three normal persons outside the epidemic zone.

Results of Precipitin Experiments in Epidemic Poliomyelitis

Groups	Persons	Positive				Negative
		Mildly	Strongly	Total	Per Cent.	
Poliomyelitis:						
Proved cases	85	28	42	70	....	15
Abortive cases	13	7	4	11	....	2
Total	98	35	46	81	83.0	17
Normal contacts	40	13	18	31	77.5	9
Miscellaneous diseases:						
Detroit*	20	7	6	13	65.0	7
Rochester†	21	1	0	1	4.8	20
Scarlet fever:						
Detroit*	21	4	1	5	24.0	16
Chicago†	21	2	0	2	9.5	19
Normal persons:						
Detroit*	90	34	19	53	59.0	37
Rochester† and Chicago†	90	5	0	5	5.5	85

* In epidemic zone.
† Outside epidemic zone.

As shown in the tabulation, a high incidence of positive reactions was obtained not only in cases of poliomyelitis (83 per cent.), but also in normal contacts (77.5 per cent.), in persons ill with various diseases (65 per cent.), with scarlet fever (24 per cent.), and in normal persons within the epidemic zone (59 per cent.); whereas a uniformly low incidence was obtained in the control groups outside the epidemic zone, namely, 4.8, 9.5 and 5.5 per cent., respectively. Results of animal experiments not yet completed are in agreement with these findings, and indicate that a positive precipitin reaction spells the presence of the pleomorphic streptococcus. The group of miscellaneous diseases, both in Rochester and in Detroit hospitals, included children ill with tuberculosis, osteomyelitis, malnutrition, pneumonia and epilepsy. All but two of the positive reactions in scarlet fever were obtained more than a week after onset. The amount of exudate obtained at the height of scarlet fever was many times greater than that obtained in cases of poliomyelitis, yet all of these tested negatively. Tests in all persons suffering from severe rhinitis, nasopharyngitis or tonsillitis were also negative, both inside and outside the epidemic zone. The normal control group, both inside and outside the epidemic zone, was composed of about an equal number of children and adults. The former were mostly school children from 11 to 14 years of age; the latter were chiefly medical students. The incidence of positive reactions in the epidemic zone was no higher among the children than among the medical students.

That intimate contact with poliomyelitis may render persons positive is strikingly illustrated by the results of tests made on myself. October 1 and 4, before entering the epidemic zone, swabbings and nasopharyngeal washings gave negative reactions. October 13, immediately after my return from the epidemic zone in Detroit, where I spent five days swabbing the throats of many patients with poliomyelitis, the test was strongly positive. October 16, it was mildly positive, while, October 18, it had become negative. From October 21 to 28, I was again in Detroit to obtain additional nasopharyngeal swabbings. October 29 and 31, the test again proved positive, while tests, November 3 and 4, were negative.

The duration of a positive test in normal persons in the epidemic zone appears to be shorter than that in patients having poliomyelitis. Ten of nineteen medical students who gave a positive reaction, October 10, tested negatively twelve days later. Patients who were given goodly amounts of the serum yielded negative reactions earlier than those untreated, but disappearance of symptoms and a negative precipitin test did not run parallel. Positive results were obtained after several daily nasopharyngeal irrigations with sodium chlorid solution, and after nasal instillations of mild antiseptics. The swabbings were nearly all made at intervals between October 6 and 29, at a time when the epidemic in Detroit had become widespread, when the greatest incidence had been reached, and when from two to five new cases were reported daily.

The close relationship between the streptococcus isolated from poliomyelitis and that from encephalitis is again emphasized in this study, as in previous experiments. The encephalitis serum usually gave positive precipitin reactions with swabbings from poliomyelitis cases (Tube 3 in the illustration), and both the poliomyelitis and encephalitis serums gave positive reactions in each of seven cases of encephalitis. The chorea serum gave a positive reaction in five of eighteen cases of poliomyelitis; in one of five cases of encephalitis; in none of twenty-one cases of scarlet fever, and in two of ninety-seven normal controls. The antihemolytic streptococcus serum of septic infection caused slight clouding in two of eighty cases of poliomyelitis; in none of seven cases of encephalitis; in two of thirty-two cases of scarlet fever, and in seven of 160 normal persons. The antihemolytic streptococcus serum from scarlet fever gave a positive reaction in two of seventeen cases of poliomyelitis; in none of seven cases of encephalitis, and in three of seventy-six normal controls, while seventeen of thirty-two cases of scarlet fever reacted positively. Cultures of the material swabbed yielded the hemolytic streptococcus in all but one of the seventeen positive cases, whereas only three of the fifteen negative reactions yielded this organism. In other words, a positive reaction was obtained in all but three of twenty cases in which the hemolytic streptococcus was proved present in the throat at the time the test was made. Slight clouding at the point of contact occurred in normal horse serum with nasopharyngeal washings in four of ninety-eight cases of poliomyelitis; in none of seven cases of encephalitis; in none of forty-two cases of scarlet fever, and in two of 178 normal persons.

COMMENT

The reaction described appears to be a specific precipitation, resulting from a union between precipitogen in the cleared extract and precipitin contained in the serum. Control immune serums and the serums from eleven normal horses have given uniformly negative results. Absorbing precipitin from the reacting serums with antigen renders them inert. Shaking the precipitating serums with large amounts of ether and with animal charcoal and kaolin does not alter the reaction. Positive reactions have been obtained in the case of the stronger antigens with the hyperimmune serums diluted as high as 1:50, and with the undiluted serum and the stronger antigens diluted 1:5. Positive results were obtained alike with poliomyelitis serums prepared chiefly by injecting the streptococcus isolated from infection atria, from brain and cord in fatal cases, and from brain and cord of monkeys paralyzed with virus. One of these serums had been kept in the ice chest for seven years. Positive reactions have also been obtained after the suspensions had been kept at room temperature for three days, while being transported a long distance; and cleared extracts have remained positive when kept in the ice chest for more than a month. Precipitogen contained in the nasopharyngeal extracts passes through bacterial filters, resists heating to 60 C. for thirty minutes, and is not readily adsorbed by animal charcoal and kaolin.

The results of the precipitin reaction, as of the animal experiments, corroborate my former findings, and warrant the conclusion that infection of the upper respiratory tract by a streptococcus having peculiar neurotropic and other properties occurs constantly in patients with acute poliomyelitis, and that during epidemics this is also true in a large number of normal persons. Perhaps disappearance of epidemics and freedom from poliomyelitis for some years thereafter are due in part to immunity acquired through infection by this streptococcus, even without invasion of the central nervous system. In any event, a positive reaction seems not without significance, because within a week after the throat swabbings proved positive, two persons are known to have developed severe attacks of poliomyelitis, and three, abortive attacks. The question whether a positive reaction indicates the presence of true virus in addition to the streptococcus is still uncertain and is at present under investigation.

Since the reaction is positive at the onset of poliomyelitis, even before paralysis has developed, the test should find its greatest usefulness as an aid in early diagnosis, and hence in early serum treatment. Since the reaction becomes negative in most cases in from two to three weeks, it may prove a simple means of determining when quarantine may be lifted with safety. Moreover, it may also prove of value in epidemiologic studies of poliomyelitis.

The results in encephalitis and scarlet fever suggest that a similar reaction may prove useful in the study of other diseases.

Leprosy and the Madagascar Hody-Potsy.—Major Kerebel of the medical corps, stationed in Madagascar, questions whether some of the cases segregated as leprosy are not in fact advanced cases of the mutilating mycosis known locally as a hody-potsy. He compares the clinical pictures of the two diseases in an article in the *Marseille-médical*, Dec. 25, 1923, p. 1401, and urges a revision of the segregated lepers from this point of view. Asymmetry, pruritis and absence of neuralgia are features of the mycosis, although the aspect may simulate that of leprosy in every other respect.

PREVENTION OF CONGENITAL SYPHILIS BY TREATING MOTHER DURING PREGNANCY

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One of the most hopeful achievements of modern antisyphilitic therapy is the birth of children free from the infection of their mother. Statistical reports confirming this statement have been published repeatedly by physicians, both from their private practices and from hospital wards. Some data on the results obtained by treating women during the child-bearing period, recently collected from eighteen municipal clinics of this state, are offered as evidence of the great benefits to be derived from careful treatment of ambulant patients at public clinics or dispensaries.

These clinics, with few exceptions, are not associated with hospitals, but are municipally supported and operate under the direction of the city health officer. Only indigent ambulant patients are treated, a majority of whom have been referred to the clinic by physicians and visiting nurses. Until recently, no especial efforts were made to bring under treatment syphilitic pregnant women; hence, comparatively few such records were available, considering the large number of patients under treatment. Fairly complete data were obtainable on seventy-six cases, in all but one of which the patients, since beginning treatment, either have given birth to children or are now pregnant.

Eleven women came for treatment before or during their first pregnancy. The sixty-five who had pregnancies prior to coming to the clinic may be divided into two groups: Eighteen (38 per cent.), which we shall designate as Group A, were childless, while the other forty-seven (62 per cent.), which we shall designate as Group B, had living children when treatment was begun. Jamieson,[1] in a study of seventy-one families infected with syphilis, found almost an equal proportion, 37.5 per cent., to be childless.

TABLE 1.—*Ages and Total Number of Pregnancies at Time Data Were Collected*

Group	Number of Patients	Age		Number of Pregnancies
		Limits, Years	Average, Years	
Primiparas	11	17-32	23	13
Multiparas (A)*	18	19-36	25	60†
Multiparas (B)	47	19-39	28.5	200

* The multiparas have been divided into two groups: A, those who had no children living when they came for treatment, and B, those who had living children.

† Many of the women could not give the exact number of conceptions they had had, and in order to be as free from error as possible, only those conceptions were noted that could be clearly recalled.

The women were all married and represented a number of nationalities, but only four were negroes. The ages varied between 17 and 39 years, the primiparas being the youngest, ranging between 17 and 32 years, with an average of 23 years; the multiparas with no living children ranged between 19 and 39 years, with an average age of 25 years, and those with living children ranged between 19 and 39 years, with an average of 28.5 years.

The results achieved by the women in their efforts to bear children prior to receiving treatment are out-

1. Jamieson, R. C.: Syphilis in Detroit, Am. J. Syph. 2: 519 (July) 1918.

lined in Table 2. Those in Group A had at least fifty conceptions, thirty-four, or 68 per cent., of which had been interrupted by abortions or miscarriages, or terminated as stillbirths; sixteen, or 32 per cent., had terminated in living children, all of whom had died within a few weeks after birth. The women of Group B, who had about the same number of conceptions in proportion to their years, were more fortunate in the outcome of their pregnancies; a few more than half, 55.5 per cent., resulted in living children, while sixty-four, or 31 per cent., were interrupted, and twenty-eight, or 13.5 per cent., resulted in children that died in infancy. H. C. and M. H. Solomon,[2] in their study of 555 families, in which at least one member had syphilis, reported that 20.7 per cent of the pregnancies of these families had been interrupted by abortions, miscarriages or stillbirths.

A brief survey of Table 2 will show the terrible wastage due to syphilis. Sixty-five women averaging in age about 27 years had 256 recorded pregnancies, with but 114 living children. In other words, they averaged four pregnancies each and had fewer than two children apiece, many of whom were conspicuously marked with stigmas of inherited infection. Only twenty-seven, or 42 per cent., had not had at least one interrupted pregnancy.

The primiparas were each with two exceptions delivered at full term of an apparently healthy normal child. None of these children exhibit any syphilitic

TABLE 2.—*Conceptions Prior to Taking Treatment and Their Results*

Group	No. of Patients	Conceptions	Interrupted or Stillborn	Infant Deaths	Infants Living
Primiparas....	11	0	0	0	0
Multiparas (A)	18	50	34 (68%)	16 (32.0%)	0 (0%)
Multiparas (B)	47	206	64 (31%)	28 (13.5%)	114 (55.5%)

stigmas, although some are more than a year old. The two exceptions were an abortion, which was found to have been artificially produced, and one pregnancy not terminated when the data were collected. In one instance in which therapy was instituted before marriage three pregnancies have resulted in the birth of three children, all of whom are free from any symptoms of syphilis.

The eighteen multiparous women who had no living children when they began treatment have each, with four exceptions, had a child apparently free from congenital infection. The exceptions include two incompleted pregnancies, one fetal death from dystocia and one miscarriage attended by hemorrhage which proved fatal to the mother. These eighteen women, who before receiving antisyphilitic treatment were childless in spite of fifty conceptions, have had fifteen living children from seventeen pregnancies since treatment was begun.

The forty-seven multiparous women who before taking treatment had 114 living children from 260 pregnancies have had subsequently fifty-four conceptions, eight of which have not been terminated. These forty-six pregnancies resulted in thirty-eight living infants, eight abortions, miscarriages or stillbirths and six infant deaths. Three of the five interruptions were miscarriages occurring to two women who were careless about their attendance at the clinics and received very unsatisfactory treatment. Of the six infant deaths, two were twins and a third was one of twins; while their deaths may have been due to syphilis, it must be remembered that the infant mortality for twins is greater than for single births. There were three sets of twins in this series.

Table 4 does not give a complete picture of the amount of treatment because in several instances the number of treatments could not be determined, as for example, when mercury was given only by inunction, and in some cases in which no record had been kept of

TABLE 3.—*Conceptions Subsequent to Taking Treatment and Their Results*

Group	Conceptions	Unecompleted	Interrupted or Stillbirths	Completed with Living Fetus	Total Children Born	Died in Infancy	Lived
11 primiparas.....	13	1 (7.7%)	1 (7.7%)	11 (84.5%)	11	0	11 (100%)
18 multiparas (A)	19	2 (10.5%)	1 (5.1%)	16 (84.5%)	16	1 (6%)	15 (94%)
47 multiparas (B)	54	8 (15.0%)	5 (9.1%)	41 (76.0%)	44*	6 (13%)	38 (87%)

* Three pairs of twins.

the number of injections given, although treatment had extended over periods from eight months to three years. The figures, therefore, may be considered as a minimum average.

The scheme of treatment which the clinics employ consists of eight intravenous injections of arsphenamin given at intervals of a week, and fifteen intramuscular injections of mercury, also at intervals of a week; while treatment with arsphenamin and mercury are carried on simultaneously they are rarely administered on the same day, but are separated by a three or four day interval. After the fifteen injections of mercury are completed, a rest period of a month or six weeks is permitted and then the procedure with both drugs is repeated. The size of the dose of arsphenamin is gaged by body weight, 0.1 gm. being allowed for each 30 pounds (13.6 kg.). The mercurial preparation most commonly in use is mercuric salicylate, and the average dose is 1 grain (0.065 gm.). Unless the beginning of treatment was suggested by the presence of some open lesion, it was found difficult to procure satisfactory

TABLE 4.—*Average Amount of Treatment Received by Members of Each Group Before and During Pregnancy*

Group	Injections	
	Arsenical	Mercurial
Primiparas	17	22
Multiparas (A)	15	23
Multiparas (B)	14	19

cooperation with the patient. Of the three groups, the primiparas, it will be noticed, took the most treatment, undoubtedly because they started when the primary or secondary lesions were the principal symptoms, and these women were influenced to continue treatment during pregnancy. Most of the multiparas became interested in their condition by physicians or nurses discussing with them the health of their children or the cause of an interrupted pregnancy. Some were discovered at the prenatal clinics and referred to the venereal clinic for treatment. Many of the multiparas are still under treatment. Only one instance arose in which treatment had to be discontinued; the patient

2. Solomon, H. C., and Solomon, M. H.: Syphilis of the Innocent, Washington, U. S. Interdepartmental Social Hygiene Board, 1922.

became jaundiced after three injections of arsphenamin, and treatment had to be continued with mercury alone.

The data collected in this paper do not differ materially from what has been published by a number of others, but in a confirmatory way they have especial value, in that for these cases the work was all done at public clinics. The experiences of these clinics lead one to presume that any community has it within its power to reduce materially the number of infant deaths and to increase its bith rate by maintaining prenatal and venereal disease clinics, properly organized and harmoniously functioning.

BARBITAL (VERONAL) POISONING*

WILLIAM H. LEAKE, M.D.
AND
E. RICHMOND WARE, M.D.
LOS ANGELES

The use of barbital (veronal), or diethylbarbituric acid, as a hypnotic has constantly increased since its discovery in 1903. It is an effective drug with a considerable margin of safety, may be obtained in most localities without a physician's prescription, and the possibility of its producing a habit is not generally appreciated. These reasons have been partly responsible for its popularity with both the laity and the profession. Medical literature, however, particularly in Germany and England, contains many reports of severe poisoning and fatal results from its use in excessive doses or in long continued administration. Its action is quite rapid, ordinarily producing sleep in from one-half to one hour, and in moderate doses is seldom followed by distressing after-effects. From 70 to 90 per cent. of the ingested drug is eventually eliminated in the urine; but its excretion is slow and is often extended over a period of from two to four days, which frequently accounts for poisoning when the individual doses have been of only moderate size. Sands [1] believes that its hypnotic effect is produced by a dilatation of the smaller vessels producing a slowing of the peripheral arterial circulation and hence a reduction of the oxygen and carbon dioxid exchange, with a consequent dulling of the sensibilities. Poisonous doses also produce a degeneration of the renal tubular epithelium and of the liver cells.[2] If not due to an intercurrent bronchopneumonia, which is very common, death results from extensive damage to the kidney cells or to respiratory paralysis.

In the Los Angeles General Hospital there have been sixty-one cases of barbital poisoning in a period of two years. In reviewing these cases, it was very remarkable to us to find that they involved an unstable and inferior part of society. A large number of persons were addicted to the use of this or some other drug. Eighteen took barbital habitually, ten were chronic alcoholics, and eight were morphin addicts, while one gave a history of being dependent on the constant use of acetylsalicylic acid, and one was a cocain user. That there was seldom any physical basis for the use of such drugs is seen from the fact that there were very few medical or surgical complications in this group; chronic nephritis was present in one case, tabes in one, Raynaud's disease in one, and a diagnosis of general pelvic pathologic condition was present in one other case. There was one case which presented a four plus Wassermann reaction. On the other hand, a large number gave evidence of a definite psychopathic state, which ranged from a mild melancholia to manic-depressive insanity. The diagnosis of constitutional psychopathic inferiority was made in a number of instances, and the social histories showed a marked frequency of domestic troubles and general lack of social adaptability. Nineteen patients of our series took the drug with suicidal intent; several of those who recovered afterward achieved success by adopting more certain methods of bringing about their death. It is interesting to note that in many of our cases, both suicidal and nonsuicidal, there was a history of an alcoholic debauch prior to taking the barbital. The majority of patients, forty out of a total of sixty-one, were under 40 years of age. The oldest was a woman of 63 and the youngest a girl of 17. There was a slight predominance of males.

The symptoms are not uniform for every case, but usually show a depression of parts of the central nervous system and stimulation of others. Pollitzer [3] sums up all the symptoms observed in cases of barbital poisoning as including the following: stupor, coma, mental confusion or excitement, vertigo, nausea, muscular weakness or incoordination, dilated or contracted pupils, diplopia, thirst, oliguria, temperature sometimes elevated but in severe cases subnormal, heart action and respiration usually normal, but depressed in severe cases, and a rash, which may be erythematous, morbillous or scarlatiniform, with vesiculation on the extremities, and, rarely, large bullae. We have found the rash to be extremely rare in the acute cases; from a review of the literature, a rash is more commonly found in patients taking the drug over a long period of time. Pollitzer adds that most of the disturbances noted may be ascribed to an effect on the central nervous system. In the few cases examined after death, a hyperemia of the meninges and of the kidneys was found.

Our observations in this series have led us to believe that marked circulatory disturbances are absent except in the very severe cases. Cyanosis was constantly present in all of those who died. In only one of our cases was the systolic blood pressure under 100; however, the blood pressure was recorded in only nineteen. Sands [1] and Boenheim [4] mention alternate contraction and dilatation of the pupils as an important finding, but this was not observed in any of our series; in fact, the observations in regard to the pupillary findings showed no consistency whatever.

Many authors emphasize the importance of the urinary examination in barbital poisoning. In our series the specific gravity was normal in the vast majority; the reaction was variable; albumin was present in only ten, sugar in none and casts in five. There was no record of anuria or polyuria, although incontinence was frequently present during the stuporous or comatose state. The characteristic spectrum of hematoporphyrin is quite regularly found in the urine of barbital poisoning, but was not noted in any of this series.

Estimations of the blood nonprotein nitrogen, creatinin and uric acid were made in only three cases. On two occasions there was a slight elevation of the uric acid; and in one, the nonprotein nitrogen was 60 mg.

* From the Medical Service of the Los Angeles General Hospital.

1. Sands, I. J.: Barbital (Veronal) Intoxication, J. A. M. A. **81**: 1519 (Nov. 3) 1923.
2. Fraser, Margaret H.: Notes on Two Cases of Veronal Poisoning, Lancet **1**: 1736 (June 20) 1914.
3. Pollitzer, S.: Veronal Poisoning, J. Cutan. Dis. **30**: 185-189, 1912.
4. Boenheim, F.: Acute Barbital Poisoning, Med. Klin. **17**: 1263 (Oct. 16) 1921.

per hundred cubic centimeters. The other figures were normal. The leukocyte count varied from 5,400 to 20,000, with an average of 10,800. The highest counts were found in the cases complicated by bronchopneumonia. The temperature, pulse and respiration were as a rule normal except in those with pulmonary complications. Stupor was present in twenty-nine, coma in sixteen, and excitement in eight. Nausea and vomiting were conspicuous by their absence, occurring in only four cases of the series. The mental symptoms are by far the most consistent; with stupor there are usually thick and slurring speech and muscular incoordination.

The history given in acute cases of barbital poisoning is distinctly unreliable. In many instances the patients are either comatose or else much confused, with indistinct articulation, poor attention, and impaired memory. Like morphin addicts, they are often inordinate liars, and several of our patients denied vehemently the use of barbital. Without a history of taking barbital, the diagnosis is often very difficult; and it is possible that there have been numerous deaths in coma due to barbital poisoning in which the correct diagnosis has never been made. Cole [5] reports a fatal case which presented a problem in differential diagnosis involving the possibility of cerebral hemorrhage; morphin or some other narcotic poisoning; severe alcoholic intoxication; encephalitis; carbon monoxid poisoning; brain tumor; uremia; diabetic coma, or syphilitic meningitis. Most of these conditions can be readily excluded by a careful physical examination and appropriate and simple laboratory procedure. As the patients have often taken the drug following a prolonged and intensive alcoholic spree, the additional complication of barbital poisoning is frequently overlooked. Littell [6] reports such a case, in which the patient was sent to the hospital with a diagnosis of tabes and alcoholism. This patient had taken a tremendous amount of the drug, 1,335 grains (8.6 gm.) within twelve days' time; there was ultimate recovery. Encephalitis [7] seems to be the second most difficult diagnostic problem. If a history is not available, spinal puncture may be of some assistance, although, unfortunately, the results of lumbar puncture in encephalitis are by no means uniform. Owing to the almost constant excretion of the unchanged drug in the urine, a chemical examination for barbital should be conducted in all suspicious cases. Of course, the discovery of the drug in the urine or in the vomitus makes possible a definite diagnosis.

There was no systematic line of treatment pursued in this series. Many of the patients were transfers from the Receiving Hospital, where they had been taken as an immediate emergency measure. If seen early after ingestion of the drug, the stomach was washed out and from 1 to 3 ounces (30 to 90 c.c.) of magnesium sulphate solution was instilled before withdrawal of the tube. After admission to the General Hospital, fluids were forced by mouth, proctoclysis, hypodermoclysis or infusion. Caffein sodium benzoate was usually given by hypodermic injection, and catheterization and enemas were employed as indicated. In the patient who died shortly after admission, epinephrin was injected intracardially with no apparent benefit. The best procedure to follow would seem to be that outlined by Sands,[1] which is directed chiefly at rapid elimination of the drug from every possible source, washing out the stomach, high colonic irrigation, frequent catheterization, and forcing of fluids. In severe cases he recommends cardiac stimulation, oxygen inhalations and the use of hot packs.

According to Willcox,[8] the smallest dose that has caused death is 10 grains (0.65 gm.). He believes that the average minimal fatal dose is 50 grains (3.25 gm.). This is the smallest dose that resulted in death in our series. This patient, however, was not seen for several hours after taking the barbital. The time elapsing before treatment is instituted is almost of even greater importance than the amount of drug taken. If the stomach is promptly washed out, very large doses can be ingested with rapid recovery. The largest amount in this series was believed to be 375 grains (21 gm.). This patient recovered, but there is some doubt about the accuracy of the dose taken and the time passing before treatment. One hundred and twenty-five grains (8 gm.) has occasionally not proved fatal; [9] but usually any dose over 100 grains (6.5 gm.) has a very grave prognosis, unless the patient is seen early and vigorous treatment is promptly instituted.

In the nonfatal cases, recovery is quite prompt and complete. No one of this series was in the hospital for a longer period than seventeen days. Many remained but twenty-four hours, and the average stay was only five and a half days. The predominant number of days in the hospital was three. The return to a clear mental state is the first indication of recovery, and there seem to be no permanent after-effects, unless there may be some lasting damage done to the kidneys. These cases were not followed to determine this point, and we can discover no report on it in the literature. If death occurs, it seldom comes before twenty hours after taking the barbital and usually [10] on the third day; the larger the dose, the greater the probability of an early death. A patient has recovered after six days of coma.

CONCLUSIONS

Barbital is a valuable hypnotic which is followed by very few serious after-effects in moderate therapeutic doses. It has a slight tendency to habit formation, and its soporific action seems to be particularly satisfying to persons who have an unstable mental and nervous system, and to others who have a more pronounced psychopathic inferiority. This class of person furnishes the large majority of chronic barbital users or addicts. Its action is quite well known to the laity and it has lately been a popular means of attempted suicide. In California, there is no restriction on its sale; it may be obtained from any druggist without a physician's prescription, and the law does not require that a poison label be placed on the tube or box. It is slowly excreted, and the continued use of small doses may lead to severe poisoning. The most characteristic symptoms are stupor or coma, incoordination, impaired speech and a general lethargy, which may be very profound. In the fatal cases there are deep coma, cyanosis, low blood pressure, cold skin, incontinence of urine and feces and, finally, death from respiratory failure. A rash is occasionally present, especially in those patients poisoned by the cumulative effect of the

5. Cole, William: Acute Barbital (Veronal) Poisoning, J. A. M. A. **80**: 373 (Feb. 10) 1923.

6. Littell, J. J.: Veronal (Barbital) Poisoning, J. A. M. A. **77**: 1333 (Oct. 22) 1921.

7. Sands (Footnote 1). Boenheim (Footnote 4). Hassin, G. B., and Wien, M. S.: Case of Acute Veronal (Barbital) Poisoning Simulating Epidemic ("Lethargic") Encephalitis, J. A. M. A. **75**: 671 (Sept. 4) 1920.

8. Willcox, W. H.: Veronal Poisoning, Lancet **2**: 734 (Sept. 6), 1178 (Oct. 25) 1913.

9. Munroe, J. M. H.: Veronal Poisoning: Recovery from One Hundred and Twenty-Five Grains, Brit. M. J. **1**: 854 (April 18) 1914. Alexander, J. B.: A Case of Nonfatal Poisoning, Brit. M. J. **2**: 20 (July 5) 1913. Chitty, A. G.: Case of Veronal Poisoning: Recovery, Lancet **1**: 917 (March 29) 1913.

10. Peterson, Frederick; Haines, W. S., and Webster, R. N.: Legal Medicine and Toxicology, Philadelphia, W. B. Saunders Company **2**: 660, 1923.

drug. The diagnosis is often difficult, but can be made certain by the discovery of barbital in the vomitus or urine. Treatment should be instituted at once and directed to the rapid elimination of the drug. General supportive measures are indicated in the severe cases.

We feel that the ease with which this drug may be obtained is indeed a public menace. Its very value as a hypnotic that has rather a wide range of safety makes it all too popular with the laity, who do not appreciate that it has a tendency to habit formation and that under certain conditions it may cause alarming symptoms of poisoning and even death.[11] Barbital should be placed on the list of poisons, or should be sold only on a physician's prescription.[12]

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A STUDY OF ACUTE, PRIMARY TYPHLITIS *

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Few physicians fail to consider the vermiform appendix as the first and most probable cause of acute disease in the lower right portion of the abdomen. However, we sometimes overlook other conditions in this region, one of which is acute, primary typhlitis. Acute, primary typhlitis is but little mentioned in the ordinary textbooks, and we were able to find only sixteen cases reported in the literature in which the condition was found anatomically, either at operation or at necropsy, and without primary involvement of the appendix or adjacent tissues.

The recognition of acute primary typhlitis is of the greatest importance, however, after the abdomen is opened, as it is practically impossible to distinguish clinically between this condition and acute appendicitis with our present methods of examination. This is amply illustrated by our two cases, in which the diagnosis of acute appendicitis was made and in which immediate operation was performed. The finding of a free and apparently normal appendix in the presence of pus in the right lower quadrant of the abdomen after the peritoneum was opened proved at first somewhat puzzling, but careful search for the primary cause of the peritonitis resulted in the discovery of gangrenous and ulcerated areas in the cecum, in one of which the lesion was apparently due to the presence of a foreign body.

REPORT OF CASES

CASE 1.—S. H., a man, aged 19, was admitted to the surgical service of the Cook County Hospital, July 17, 1924, complaining of severe pain in the right lower quadrant of the abdomen, which came on suddenly while he was at work. The pain was located at McBurney's point and did not radiate. Vomiting occurred several times on the day after the onset of the pain, and moderate constipation had been present since the onset of the illness. The symptoms showed no signs of abating two days after their onset, at which time the patient entered the hospital. There was nothing of importance in the past history. Examination revealed marked tenderness and rigidity of the right side of the abdomen, and especially in the right lower quadrant. Rectal examination showed some tenderness on the right side, but no mass was palpated. Physical examination of the rest of the body showed nothing abnormal. The urine was negative, the white blood count was 16,000, the temperature 100.2 F., the pulse 72, and respirations 22 a minute.

A diagnosis of acute appendicitis was made, and the patient was immediately prepared for operation. Under ether anesthesia a Battle incision was made, and about a pint of foul smelling fluid escaped as soon as the peritoneum was opened. The pus apparently came from the region of the cecum and pelvis. The pus and fluid were sponged out with dry gauze swabs, and the appendix was brought up. The appendix was free and uninvolved, but examination of the cecum revealed a perforated ulcer about half an inch in diameter and situated on the anterior wall of the cecum. The region of the cecum in the vicinity of the perforation was gangrenous, and several smaller, blackish areas were present at varying distances from the perforation. The perforation was closed with three rows of linen, and the appendix was removed. The peritoneum was closed tightly and a small gutta-percha drain was left in the superficial tissues up to the peritoneum. The patient was then placed in Fowler's position, local heat was applied to the abdomen, and 6 ounces (175 c.c.) of warm physiologic sodium chlorid solution was given by rectum every four hours. The patient made an uneventful recovery, and was discharged as cured sixteen days after the operation.

CASE 2.—J. P., a man, aged 33, admitted to the surgical service of the Cook County Hospital, June 13, 1924, awoke, twenty-six hours before, with a severe pain in the right half of the scrotum. Four hours after the onset of the pain, it shifted to the region of the umbilicus and became diffuse two hours later. The pain was most intense over the lower right portion of the abdomen, and was relieved by drawing up the right thigh. The patient did not vomit spontaneously, but induced vomiting after the pain began. The pain did not radiate. The bowels were regular, and the patient had never before had "stomach trouble."

The patient was acutely ill. The temperature, 103 F.; pulse, 108, and respirations, 22. He kept his thighs drawn up. Tenderness and rigidity were present all over the abdomen, but were especially marked in the right lower quadrant. Peristaltic sounds were diminished, but the area of liver dulness was normal. Rectal examination showed tenderness on both sides, especially on the left. There was no tenderness or swelling of the genitalia. The white blood count was 15,000, and the urine was negative.

A diagnosis of acute appendicitis was made, and the patient was immediately operated on. A mass could be palpated in the right lower quadrant of the abdomen after the peritoneum was opened. A large quantity of foul smelling fluid escaped from the pelvis. The appendix was free and easily brought up, and examination showed it to be slightly thickened and reddened but not enough to account for the pus and peritonitis. Examination of the cecum showed three perforated ulcers on the anterior wall of the cecum and about 1½ inches from the ileocecal valve. A large nail, covered by hard feces, so that the entire foreign body measured about 1½ inches by three-fourths inch protruded from one of the ulcers that was perforated. An incision was made connecting the three ulcers, and the foreign body was removed through this enlarged opening. The entire area was then invaginated and closed by three rows of linen sutures. The pus was sponged out with dry gauze, the appendix removed, and the peritoneum closed tightly. The superficial tissues were treated as in Case 1, and the patient received the same after-treatment. Recovery was uneventful, and the patient was discharged as cured five and a half weeks after the operation.

COMMENT

From a study of our cases and those reported in the literature there seems no doubt that there are sufficient clinical and anatomic data to establish the fact that acute primary typhlitis may exist as a primary disease, independent of and not secondary to a general dysentery or to disease elsewhere in the vicinity of the cecum. It is not our intention, however, to renew the old

11. Veronal, editorial, Brit. M. J. 1: 182 (Feb. 9) 1918.
12. Scheduling of Hypnotic Drugs, editorial, Lancet 1:769 (March 15) 1913.

* From the Department of Surgery, Cook County Hospital.

controversy of appendicitis and typhlitis, as we are convinced that it is practically impossible with our present methods of examination to distinguish clinically between the two conditions. The clinical differentiation between the two conditions is also of minor importance in view of the fact that the treatment for both conditions is immediate operation; and it is our opinion that no time should be lost in attempting to distinguish between them before operating. A knowledge of the condition under discussion is of value after the peritoneum has been opened, as it enables the surgeon to look for the causative disease and to deal with it promptly without greatly disturbing the surrounding structures, a procedure highly desirable in the presence of pus in the peritoneal cavity.

SUMMARY

1. Our two cases, and those reported in the literature which were proved anatomically, offer sufficient evidence that acute primary typhlitis may occur as an independent and primary disease without being secondary to disease of the appendix or neighboring structures.

2. It is practically impossible to differentiate clinically acute primary typhlitis and appendicitis; and since the treatment for both conditions is immediate operation, we are of the opinion that no time should be lost before operating.

3. The importance in recognizing acute primary typhlitis manifests itself after the peritoneum is opened and pus found in the free peritoneal cavity, and an appendix that is apparently free and normal.

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Clinical Notes, Suggestions, and New Instruments

FRACTURE OF THE MIDTHIGH

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The case here reported is one of fractured midthigh, in which it was necessary to cut down the period of hospitalization. The problem, therefore, was to find a suitable apparatus to maintain correction during the transportation of the patient to his home, a distance of 20 miles, and thereafter.

C. L., aged 56, was admitted to the Monmouth Memorial Hospital, Long Branch, July 5, 1924, as an emergency case, following an automobile accident.

Examination showed dislocation of the right elbow and fracture of the midshaft of the right femur. The elbow was reduced on admission, and the case referred for treatment of the fractured femur. A Balkan frame with traction and a Thomas splint was erected the following day to overcome the overriding of the fragments. July 16, the patient was placed on a Hawley table, and, under anesthesia, the fragments were placed end to end with the aid of a fluoroscopic screen. Moleskin adhesive strips were applied to the thigh. A plaster spica was applied from the costal border to the toes, leaving a free space about the knee. A frame of 1 by 2 sticks was incorporated in the plaster, extending below the thigh in the axis of the foot. From this, weights suspended gave traction through the moleskin stickers. July 17, the patient was discharged to his home.

At the end of six weeks, the traction was discontinued, the plaster was removed below a point above the knee, and passive motion was instituted. The remainder of the plaster was removed two weeks later.

When seen six weeks ago, the patient had good function with one-fourth inch shortening.

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Special Article

MEDICAL EDUCATION AND MEDICAL SERVICE

III. THE REAL REASON FOR OUR DIFFICULTIES

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(Continued from page 369)

The chief reason for our new difficulties is that medical education has made the license to practice medicine so expensive that those who are now paying the high price for this license exact a correspondingly high price for their services under it. As you increase the cost of any needed article, you increase the price at which it will be sold. This is an economic principle and, as such, its action is inevitable. It applies as much to physicians' services as it does to those of a hotel. Although the Council on Medical Education and Hospitals estimates that from 80 to 90 per cent. of all patients could be well cared for by the general practitioner, and that 90 per cent. could properly be cared for in their homes or in the physician's office,[26] we are educating men to be specialists or who are able to choose to do their practice chiefly in hospitals.

Physicians all over the country, who are simply interested in the facts and are not concerned about their bearing on our policy, recognize this reason. Laymen, not realizing that there is any mystery about it, assume it as a matter of course, as, for example, that old and canny paper, the *Youth's Companion*,[27] which says, in considering this subject:

> It [medical education] becomes more expensive, more difficult to attain. . . .
>
> Now the smaller medical schools, where a training could be had at a reasonable cost, . . . are one by one going out of existence. . . .
>
> The tendency of the great schools is to turn out intensively trained specialists . . . and *to make the business of getting a degree so expensive* that the young doctor is not willing to consider the physical hardships and the small income of an ordinary country practice.

And the Chicago *Daily Journal*[28] says:

> What percentage of young men . . . can afford such an outlay [as medical education now demands] . . . It might pay . . . physicians to take counsel together and see whether they have not overstepped the mark.

We try with all our ingenuity to explain the reason away, but occasionally we let fall inadvertently a statement that shows that we recognize it. Thus, THE JOURNAL says in an editorial,[16] "During the period ending in 1920, . . . the reduction in the number of colleges and *the adoption of higher educational standards took place. A reduction in the annual output* [of physicians], *therefore, was expected.*" Here reduction in the "output" of physicians is accepted without qualification as a logical sequence of "higher educational standards."

And the Reference Committee on Medical Education and Hospitals[29] gives us in one paragraph this illustration of reasoning back and forth on this subject:

First it says, "This condition [shortage of physicians in the country] . . . is not in the first place due

26. Proceedings of San Francisco Session, J. A. M. A. **80**: 1929 (June 30) 1923.
27. Youth's Companion, March 10, 1921.
28. Chicago Daily Journal, March 7, 1922.
29. Proceedings of Chicago Session, J. A. M. A. **82**: 1970 (June 14) 1924.

to the raising of the standards of medical education." And then, two or three sentences farther on, follows it up: "To any further raising of the standard your committee is opposed, *because if* the requirements are made too stringent and *the length of medical education is made too great,* it will be difficult for the graduate and *will be even more difficult to get graduates to go to rural districts.*" One could hardly give more complete expression of acceptance of the principle.

Indeed, the actual admission of the recognition of the reason is made in our reluctance to discuss it. If it could have been brushed aside easily, there is no doubt that the ground would have been cleared long ago by doing this, and the subject would not have been confused by laborious efforts to show how collateral influences were actually at fault. Nobody has had the temerity to attempt to show how making medical education more difficult has not increased the difficulty of getting it, or, to put it in a less obvious contrast, how it has not influenced the output of physicians. Instead, we affirm year after year that the raising of requirements is not the cause of our difficulties, but that the cause is economic and social.

The most that will be admitted is that it is not proven. For example, THE JOURNAL [30] approves the position that "does not accept without proof the widely heralded statement that the increased standards of medical education and the extended duration of required study are to be charged with the lessened supply of such practitioners [rural physicians]." The most that any one can say about such a position is that it is a position of negative defense. It is not a position to be chosen when you have direct evidence to establish your lack of responsibility for failure of a policy. The chief merit of this argument might be said to be that to furnish the sort of proof this argument demands, it would be necessary to lower requirements and see the results, and this is unalterably opposed.

As a matter of fact, what more proof could be demanded than the situation now presents? The action of the principle, that as you increase the cost of anything you limit opportunity of obtaining it and restrict its distribution, is obvious and beyond denial; the way this principle acts in this situation is clear; its effects were predicted when our policy was being established (and denied with the same sort of arguments used now); the results have occurred as predicted. What more convincing proof could reasonably be demanded?

One feels like apologizing for elaborating on the action of the simple principle that as you increase the cost of anything you limit opportunity and distribution; but in view of this attitude of "without proof," it seems necessary to do so. The principle acts in medicine, of course, by restricting opportunity on the basis of the worldly situation of prospective students. And there is no other principle so effective as this in determining the course of young men. Every year that a young man lives without productive labor is a very considerable burden to somebody. He is not only failing to contribute to the support of his family, but his support has to be provided. This expense is difficult to the ordinary family for even one year after high school age is passed; and as you multiply the number of years, this difficulty becomes increasingly great, so that you rapidly eliminate opportunity for most young men. So much is this true that, while most ambitious families are willing to make every sacrifice that their children may have a college education, a college education is nevertheless recognized as a privilege of a very small part of the community. When you add to a college education three years more—seven years from high school—you make the opportunity one that is restricted indeed. The action of the principle in medical or other education is so simple that it can be expressed in a simple algebraic equation.

It is equally simple the way the principle acts in the distribution of our present "product of medical education," by making it so expensive in all the rewards society must pay for its service that it is beyond the resources of a very large part of the people.

One very important fact in the bearing of this principle on the rural shortage of physicians is the way it is debarring from medicine young men from small towns and rural districts. As the expenses of living there are less than in the cities, so also are the incomes of the class from which come medical students. Accordingly, country people of the same or a better class than that from which medical students come in the cities are less able to bear the burden of medical education for their children. As a result, medical students are not coming from the country.

As Secretary McCormack of the Kentucky State Board of Health has said, in a letter of June, 1920: "At present there are no students from the country districts. In a recent examination to practice there were forty-two applicants: forty of these were from Louisville or from cities outside the state."

And as Dean Hough of the University of Virginia Department of Medicine puts it: "In my own section [i. e., rural Virginia] there can be no question that the expense involved deters from the study of medicine a large number of students who are born of good American stock and whose background of home and community life constitutes one of the most valuable assets of the medical profession." [31]

The medical students now are in excessive proportion city boys. They are also in disproportionate degree from foreign families, who, imbued with the caste traditions of the professions abroad, are ambitious, when they become prosperous, that some of their children may have the social advantages that the medical caste has in the lands from which they come. Hough, testifying on this point, continues: "I confess to a decided feeling of dissatisfaction when each year I see the places of these students . . . taken by students of foreign parentage from the large cities." These city students have no thought of going to the country. They know only the city, and in the city they remain. The high cost of medical education, therefore, is acting in a particular way to accentuate the rural shortage of physicians and to keep out of medicine some of the best material.

This whole subject of distribution of doctors is well illustrated in the evolution of unnumbered city doctors. Their fathers were country boys who obtained a country education in high school or academy, studied medicine, and became country doctors. As country doctors they became prosperous, and their boys, as a rule of no better quality but more easily situated, were able in turn to choose easier and more ambitious careers, and became city doctors. This evolution of the city doctor is so common that it might be used as an argument for the prosperity of country doctors.

In another way this great prolongation of medical education tends to deplete the country. There are

30. The Product of Medical Education, editorial, J. A. M. A. **83**: 1168 (Oct. 11) 1924.

31. Association of American Medical Colleges, 1924, p. 66.

great numbers of young men, who, realizing the limitations of their opportunities or, correctly or incorrectly, estimating their capacities as not above the ordinary, are content with the prospect of a success in life measured by the meaning of success in the environment with which they are familiar. Their ambition, and a proper one, is to be successful members of the community in which they have been reared. Such men, as a matter of fact, make up the great majority of our substantial people, and include in their numbers not a few who ultimately become outstanding. They are apt to be men of character, ambitious for the solid satisfactions of life rather than its glittering ones, and imbued with the necessity of effort in order to obtain them. They are either not so situated in early life or not of a temper to take a training far in excess of what other men similarly situated take. They will prepare themselves as they see other men around them prepare themselves, but they will not make immoderate preparation. These valuable men, willing to do the ordinary work of the world and accept its ordinary rewards, are cut out of regular medicine under present conditions—in the cities as well as in the country.

The action of the factors that I have been considering above in determining the distribution of physicians is illustrated in the cases of two institutions that I have analyzed. I doubt not that the same facts would be shown in an analysis of others.

In arguing that exacting requirements did not prevent doctors choosing country practice, Mr. Abraham Flexner [32] in 1910 enumerated twelve Johns Hopkins graduates who were practicing in small communities. I have, as a result of that suggestion, analyzed the entire distribution of Johns Hopkins medical graduates. The Johns Hopkins circular for 1923-1924 lists its graduates in medicine from 1897 to 1923, inclusive, with their residences. In my analysis of their distribution I have omitted the classes after 1920 because they are not yet distributed and nearly all of them are doubtless in cities. The total number of graduates of Johns Hopkins in the classes of 1897 to 1920, inclusive, is 1,592. Of this number, thirty-two are located in towns of 2,500 or less. But although the census establishes villages of 2,500 as the maximum of the rural districts, for our purposes I think it is fair that 5,000 should be the limit. In towns between 2,500 and 5,200, Johns Hopkins has located fifteen graduates. Of these, forty-seven graduates located in towns of 5,200 or less, three are in immediate suburbs of large cities, and five are in institutions of various sorts and are not in rural practice. Deducting these eight from forty-seven graduates living in the country, we have thirty-nine graduates of Johns Hopkins who now are or who were located in rural districts. That is, of her 1,592 graduates in twenty-four years, *2.45 per cent. are in towns of 5,200 or less.*

Dr. Gordon Wilson [33] of Baltimore made in 1914 a study of the distribution in Maryland of Johns Hopkins graduates as compared with other graduates of Baltimore schools, which is even more instructive. Dr. Wilson writes:

> In the sixteen years from 1897 to 1913, inclusive, the Johns Hopkins Medical School graduated 965 men, of whom only four are practicing medicine in rural Maryland. During exactly the same period the University of Maryland School of Medicine graduated 1,225, 140 of whom are practicing medicine in Maryland outside of the cities [that is, approximately, 0.4 per cent. of Johns Hopkins graduates are practicing in rural Maryland and 11 per cent. of those of the University of Maryland.—W. A. P.].
>
> I believe that these figures justify my belief that the graduates of a school like the Johns Hopkins will only exceptionally settle in the country, and that if we want physicians who will practice in the country, we must make the premedical requirements less exacting *in time.*
>
> A growing country cannot be supplied by a diminishing output of medical practitioners. We are facing a real and dangerous shortage.

Men from institutions like Johns Hopkins have their useful function in society, but it is not to do the day's work in the country.

Johns Hopkins is at one extreme. It has demanded a college degree as a preliminary requirement. I have also analyzed the distribution of the graduates of the University of Illinois College of Medicine, formerly the College of Physicians and Surgeons of Chicago. I chose this institution because it is one with which I am familiar and one whose students have represented the average type of young men who sought medical education during the last thirty years. Fortunately, also, the facts were available to 1920, in its alumni register of that year. Its entrance requirements were a high school education until 1913. The total number of its graduates from 1890 to 1916 (when the last class entering on a high school requirement graduated) was 4,334. The number of those who settled in towns of 5,000 or less is 922—21.28 per cent. against 2.45 per cent. for Johns Hopkins graduates during approximately the same time.

One other argument that is offered is that the present régime in medical education has not been in force long enough for us to know how it will result. We began this campaign twenty years ago. It has been practically effective for ten years. As soon as possible after it was established, its effects became manifest in the failure of graduates of the last ten years to go to the country. The actual fact is, not that we have not had the policy in force long enough to know what its results will be, but that it is surprising these results as predicted should manifest themselves to so strong a degree in so short a time.

EXPEDIENTS OFFERED TO MEET THE DIFFICULTIES

In the Cities.—We are striving to meet the difficulties of service in the cities by urging the importance and dignity of the family practice of medicine, by trying to devise changes in our curriculum that will make general practitioners and not specialists, by proposing that graduates be required to engage for a given number of years in general practice and by other proposals to try to overcome artificially the natural tendencies that are produced by the training that we are giving our graduates. These expedients are, I believe, as futile as all other efforts to make water flow up hill or to escape undesirable movements that are in accordance with natural laws. In the way we are undertaking to find substitutes for the physician, by filling medical and quasimedical positions with laymen, by the employment of nonmedical clinical assistants as substitutes for interns, by having nurses take over many of the functions of the physician, we are indirectly confessing that much of the work that was formerly done by physicians must under our present policy be done by some one else.

32. Flexner, Abraham: Medical Education in the United States and Canada, 1910, p. 45.
33. Wilson, Gordon: Medical Education with Reference to Rural Communities, J. A. M. A. **66**: 1073 (April 8) 1916.

The city situation, however, is a relatively unimportant one. There is not likely ever to be a shortage of physicians in the cities. But it is another question whether, under our present policy, we are preparing to meet adequately the practical needs of medical service for the great mass of urban population.

In the Country.—The rural problem is in a different category. The opinion is widespread that there is pressing need for its solution, and at the same time that we have no solution to offer.

The Committee on Medical Service of the Conference of State and Provincial Health Authorities, in its report of 1923, says: "The demand for its rapid solution is imperative."

The Reference Committee on Medical Education [29] says: "The real problems of how to get the benefit of trained men for the rural districts has not been solved."

Lewellys F. Barker [34] says: "The problem of rural medical service remains to be solved, and the medical profession should set to work to solve it at once."

And J. M. T. Finney [35] says: "They must be taken care of [the people in the country]. At the present time no adequate solution offers."

In the face of a situation like this, what measures are we offering that are to keep the rural dwellers "as well supplied with *service* as formerly?" I quote again from the article by Secretary Colwell:

> Until some readjustment can be made to restore competent doctors to the country districts which need them, some special measures will be required in these districts.

And these are the special measures he offers in the next paragraph:

> In some states, health officers make periodic visits, . . . rounds are infrequent; but they might be able to provide some medical care of the sick. In some states also public health nurses or social service workers (nurses) supplement the work of health officers. Nurses can do a great deal of good in minor health matters, in securing physicians for emergency cases and in rendering first aid. . . . Small hospitals and clinical stations might be established.

Health officers to be drafted to give such sort of medical attention as they can on their infrequent rounds, nurses to practice as far as they are able as substitutes for doctors, small hospitals, and clinical stations where there are no doctors! Does the suggestion of such "special measures . . . until some readjustment can be made" carry any hope that we have any relief to offer for the immediate medical needs of rural communities? Such suggestions indicate a lack of sober realization of our responsibility in the rural medical situation or of the necessity of actually facing it.

And then he paints a picture of rural conditions that will attract the doctor back to the country:

> To insure doctors permanently for rural communities, a restoration of reasonable living conditions is essential. . . . improvement of country roads and the equalization of educational opportunities, . . . more social, recreational and other advantages, . . . students taken to and from consolidated schools in motor busses.
>
> . . . . in the future, beautiful community centers will be established, where in addition to the consolidated school one can find also a theater—at least a movie house— . . . a small hospital and other facilities for public welfare and recreation.

We paint a picture of desolated rural districts, like Goldsmith's Deserted Village, as the only place where doctors are lacking, and we tell them to convert themselves into social centers to attract us. This is not taking care of the rural sick in the present world but in a world to come.

Other expedients that we offer are peripatetic doctors who shall have a couple of office hours on certain days at central points, community ambulance services to take patients to these centers or to community hospitals, the subsidizing of community physicians. These suggestions all seem to contemplate without hesitation the elimination of the country family doctor. If they were to be adopted, medical service in the rural districts as we have always known it would cease to exist and the family doctor disappear.

The novelty of these suggestions indicates the desperation to which we are driven in trying to find a substitute for the country doctor; they indicate, in fact, our utter impotence in the situation. Assuming for the moment that these substitutes would be adequate and satisfactory, what reason is there to believe that rural people will accept them? They have always employed their physicians and paid them for their services. That is a normal and salutary situation, one of economic independence. Can we assume, when it comes to the matter of our services, that, under the new dispensation that we are proposing, they will surrender their custom and accept, without protest, what we are pleased to offer them? And they can protest effectively; all they would have to do to topple over our house of cards would be to change, through state legislatures, the requirements for the practice of medicine. But there is no likelihood that any or all of these socialized substitutes for the family doctor offer a satisfactory solution of the problem. To quote Adams again:

> But, say the apologists for medical centralization, "the countryman can always come in to the hospitals, whose specialists are at call, and thus avoid the high cost of distant visits." The main weakness of this argument is that it is not true. . . .
>
> But even assuming everything to be true that the advocates of city treatment for country dwellers advance . . . there still remains one reason why the disappearance of the country doctor would be, and is, a local calamity. For not only is he the curator and healer of his community—the auto-borne city specialist might be that if he can get there in time—he is also its ever watchful guardian as the city man never can be.

The only direct suggestion that we offer for a substitute for the family doctor is that of subsidizing community doctors. This recommendation has been repeated from year to year. In its 1923 and 1924 reports, the Council on Medical Education and Hospitals referred with approval to an act passed by the New Hampshire legislature, enabling any town to support a resident physician which cannot otherwise get one.[36] It is evident that this plan of subsidizing doctors has been tried in one way or another in numerous places. There is, however, no evidence that it is meeting with any great amount of success. Although there are, let us hope, 25,000 doctors still practicing in rural communities in this country, the Council on Medical Education and Hospitals, in 1923, referred to one community, in the West, where this was being successfully done.[37] But even if this method should be successful, it would have the strongest social

34. Barker, L. F.: The Future of Medicine in America, abstr. J. A. M. A. **76**: 1527 (May 28) 1921.
35. Finney, J. M. T.: The Physician, p. 98.
36. Proceedings of San Francisco Seccion, J. A. M. A. **80**: 1931 (June 30) 1923. Proceedings of Chicago Session, ibid. **82**: 1954 (June 14) 1924.
37. The report of the General Education Board, 1924, on the distribution of physicians gives several other examples.

objections to it. As many have pointed out, it is medical socialism.

"If towns embark upon such a program, a long step would be taken toward the *socializing* of the profession or *state medicine*." [8]

"The need [in New England] is such that a good many towns are subsidizing physicians. . . . It is a curious *semisocialistic arrangement*. . . ." [27]

"Indeed, the suggestion is often made that physicians be subsidized or paid for part time by counties or municipalities. From that arrangement to *medical socialism* the step would not be long." [38] And then there is added the wise comment: "The best preventive of state socialism in any direction is enlightened and voluntary cooperation, under ideals of devotion to the general good."

THE JOURNAL itself [22] has linked together the community subsidizing of physicians and the British National Insurance Act (the panel) as twin measures for the relief of rural difficulties, and has come dangerously near giving tacit approval to the latter in the following: "In this country the problem will be met by guaranties . . . by citizens or, as . . . in New Hampshire. . . . In England, . . . modifications of the national insurance act may relieve the situation by making more generous provisions . . . for the country practitioner."

As I have called attention elsewhere, the subsidized community doctor is state medicine in its most direct and comprehensive form. We have voiced our opposition to industrial insurance because it is a form of state medicine, although it applies only to certain groups in the community. We are opposed to the Sheppard-Towner Act because it is state medicine, although it is applied to only part of the service of medicine. In this suggestion of the community doctor we are advocating the employment of physicians by the elementary unit of the state to take over in whole or in part the practice of medicine in that community. In this case we are advocating state medicine, not for certain industrial groups and certain diseases, but for all diseases and for the community at large. It is state medicine reduced to its elemental form.

Medical socialism is indeed the solution of the rural problem, if not of the problem of medical service in general, that many men see. As Barker [24] says: "It seems likely that state medicine in one form or another is coming." And as Flexner [39] says: "Organized sanitary service, maintained by the state, will alone bring competent and steady medical relief to those who cannot pay for themselves." Such suggestions are not infrequent.

A consideration of the facts now available compels, I believe, the following conclusions:

Under our present policy of medical education we are not preparing to meet the common needs of medical service of ordinary people in the cities.

The failure is very much greater in the country. There is impending in the country a serious shortage of physicians, which threatens a breakdown of rural medical service.

The explanations we are offering for the rural shortage do not explain it.

The chief and determining cause for it is the excessive cost of medical education.

The way this factor acts is not obscure; it is in accordance with the simplest economic and social principles.

The remedies we are offering are artificial and economically unsound, and consequently they offer no satisfactory solution for the difficulties.

They make no provision for the continuance of the independent rural family doctor, and, if adopted, would in time eliminate him.

No amount of sophistry can escape these conclusions, once the facts are forced on us. They cannot successfully be minimized; they cannot be ignored; they cannot be explained away. If our leadership in medical education is to be respected and permanently retained, we must recognize the situation frankly; we must meet the facts directly; and if the difficulties they present cannot be overcome, we must either justify our educational policy in spite of them or change our policy. No other responsible course is possible, and sound leadership can do no less.

(To be continued)

38. Editorial, Chicago Daily News, June 11, 1924.
39. Flexner: Medical Service in Europe, 1912, p. 25. Similar suggestions occurred in the Conference of S. and P. Health Authorities, 1923, and in the conference called by Governor Smith in New York.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ANTIMONY THIOGLYCOLLAMIDE.—Antimony Amidothioglycollate.—The triamide of antimony thioglycollic acid $Sb(S.CH_2CO.NH_2)_3$. It contains not less than 30 per cent. of antimony.

Actions and Uses.—Antimony thioglycollamide and its sodium compound have been tested on rats, rabbits and dogs inoculated with trypanosomiasis by Rowntree and Abel (*J. Pharmacol. & Exper. Therap.* **2**:101, 1910). The findings were so favorable that these workers suggested the employment of these antimony compounds in the treatment of human trypanosomiasis and in trypanosomic diseases of the larger animals. Randall has used both of these antimony compounds intravenously and intramuscularly in granuloma inguinale (*J. Urol.* **9**:491, 1923, and *Am. J. M. Sc.* **168**:728, 1924) with marked success. In the doses employed they were less toxic and less irritating than tartar emetic and the results obtained were decidedly more favorable. From the results obtained by Rowntree and Abel and by Randall as mentioned above, the experimental use of these antimony compounds in kala azar and filiariasis would appear justifiable.

Dosage.—The usual intramuscular or intravenous dose employed by Randall is 0.08 Gm., dissolved in 20 Cc. of sterile water every second day until from 15 to 25 injections had been given. He recommends that at least 12 injections be given after the first healing has taken place to insure permanent cure. Its solutions are incompatible with solutions of the fixed alkalis.

Manufactured by Hynson, Westcott and Dunning, Baltimore. No U. S. patent or trademark.

Antimony thioglycollamide is a white, crystalline, odorless powder. It is soluble in about 200 parts of water; somewhat soluble in alcohol; insoluble in ether. It melts at about 139 C. (uncorrected).

Dissolve a few crystals of antimony thioglycollamide in 5 Cc. of water and add a drop of ferric chloride solution; a transient blue color appears. Boil about 0.1 Gm. of antimony thioglycollamide with 5 Cc. of sodium hydroxide solution; ammonia is evolved. Dissolve about 0.1 Gm. of antimony thioglycollamide in 25 Cc. of warm water, add a few drops of diluted hydrochloric acid and pass in hydrogen sulphide; an orange precipitate is produced.

Dissolve 0.2 Gm. of antimony thioglycollamide in 5 Cc. of hydrochloric acid, add 10 Cc. of freshly prepared stannous chloride solution and allow to stand 30 minutes. No brownish tint or precipitate should be visible if viewed from above over a white surface (*arsenic*). A blank test should be carried out, using the same quantities of reagents.

Weigh accurately from 0.2 to 0.3 Gm. of antimony thioglycollamide, dissolve it in about 100 Cc. of warm water, add 1 Cc. of diluted hydrochloric acid, pass in hydrogen sulphide until precipitation is complete and allow to stand 30 minutes. Collect the antimony sulphide in a weighed Gooch crucible, wash it successively with water containing hydrogen sulphide, alcohol, ether, carbon disulphide, alcohol and ether, dry the residue at 110 C. and weigh. The antimony sulphide obtained corresponds to not less than 30 per cent. of antimony.

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SATURDAY, FEBRUARY 7, 1925

WHEN A MUSCLE CONTRACTS

In respect to their functional performance no less than the amount of tissue involved, the muscles are of dominating importance in the body. In the adult they form nearly half the body weight, while their contribution to the metabolism is not less significant. Hence it was that the German physiologist Meyerhof [1] remarked, in a lecture delivered a few months ago in this country:

> The problem of the activity of muscle has accompanied physiology, so to speak, from its cradle. This is not astonishing, for the era of physiology coincides with that of technical development. Our science is hardly a hundred years old. In the muscle, nature has produced a machine, so startling and at the same time so perfect, that the explanation of its mechanism could not only give satisfaction to the searching mind, but also promise a rich harvest to the technical progress of mankind. And this problem is so clearly a physical one that even the vitalist admits the possibility of its being solved by means of inorganic natural science. For it is nothing else but the question, how chemical energy in the animal body is transferred into mechanical work.

An adequate theory of muscular contraction should explain the mechanism by which the shortening of the contractile elements is produced, the nature of the energy that is transformed into mechanical work, and the relation of such phenomena to the chemical changes that follow stimulation of a muscle to activity. Formerly it was customary to compare a muscle to a heat engine, in which the potential energy of the fuel is first converted into heat by combustion, and then in some appropriate way a portion of the heat is utilized to perform work. Such an analogy is still widely quoted in the popular literature of physiology, particularly because heat and work are evident concomitants of muscular function. The assumptions necessarily involved in the hypothesis lead to thermodynamic considerations that cannot well apply in a living tissue, so that the comparison cited, wherein all the energy set free in contraction is believed to exist at first as heat, is evidently faulty. Furthermore, thermometric measurements of great delicacy have shown that most of the heat developed in connection with a muscular contraction arises after rather than before the movement. Hence, the heat-producing or oxidative reaction cannot well precede the contraction.

In summarizing the current conceptions of muscular function, to the elucidation of which he himself has made outstanding contributions, Professor Hill [2] of University College, London, speaking before various American audiences, has formulated a newer conception of the muscular machine. He fancies it as "an accumulator of energy, analogous in its way to a lead electrical accumulator. The initial discharge, which may take place at a high rate, depends in no way on the oxygen supply: the final recharge, which is slower, depends directly on oxidation. In voluntary muscle, all oxidation must be regarded as recovery oxidation: even though oxidation takes place during continuous exercise, and appears to be contemporary with the exercise, it must really be regarded as recovery from previous elements of the exercise."

Although it is generally recognized that, in "the general melting-pot" of the body, work may be done by the use of any kind of foodstuff, whether it be protein, fat or carbohydrate, there is reason for believing that preference is given to the latter type when it is available. The newer studies indicate even more cogently the dominance of the carbohydrate function. Lactic acid, long known as a component of muscle under certain conditions, notably after exertion and during fatigue, has attained the center of interest. The initial phase of contraction consists in the formation of lactic acid from a precursor which in ultimate analysis is glycogen or in its immediate make-up is a sugar-phosphate complex, the "lactacidogen" of Embden. A smaller part of the lactic acid thus liberated is oxidized with liberation of heat; the larger part is reconverted to glycogen during the recovery process. Hence, Hill has remarked that one must regard lactic acid in muscle as being not so much the fuel as part of the machinery. Muscular oxidation for the most part is really recovery oxidation; and, as a consequence, the human body is capable of exerting itself nearly ten times as violently as it could possibly do were it obliged to obtain all its energy immediately by combustion. Just as a lead storage cell is found to accumulate sulphuric acid in the plates during its activity, says Hill, so a muscle is found to accumulate lactic acid; just as the storage cell has its sulphuric acid removed from plates to solution during recharging, so the muscle has its lactic acid restored to its precursor in recovery.

We face the task of formulating our conceptions of muscular metabolism on an entirely new basis of experimental evidences that have already won two Nobel prizes for their authors. In the words of one of these, the primary fuel of muscle is carbohydrate;

1. Meyerhof, Otto: Chemical Dynamics of Life Phaenomena, Philadelphia, J. B. Lippincott Company, 1924.

2. Hill, A. V.: Muscular Activity and Carbohydrate Metabolism, Science **60**: 505 (Dec. 5) 1924.

the essential element in the machinery is lactic acid, itself derived from carbohydrate. The breakdown of carbohydrate in muscle is associated with the presence of phosphates, possibly in the form of hexose diphosphoric ester. What the further details of the process are we do not know, but it is difficult not to believe that the utilization of fat by muscles can occur only after its previous "conversion" somewhere in the body. Even a subject suffering from severe carbohydrate want will oxidize carbohydrate, and carbohydrate alone, in the complete cycle of reactions resulting from an "element" of muscular exercise.

GALLSTONES AND DIET

Observations on gallstone formation have, for many years, postulated in the case of the commonest concretions, the cholesterol calculi, that the chief source of their conspicuous component was in degenerating and desquamating cells of the gallbladder and biliary passages. A little reflection will indicate that something more than purely local conditions may become responsible for the genesis of cholesterol stones. They have been found in the absence of any detectable primary causes of inflammation. The physical chemists have attributed the deposition of gallstones to a reduction in the amount of "protective colloids" in the bile, brought about by abnormal conditions. In the normal bile, they argue, the bile salts and proteins act to keep the sparingly soluble substances in a colloidal state; when these protective colloids are destroyed, however, separation of the sparingly soluble compounds ensues.[1]

Students of the subject have been slow to reckon with the possibility that there may also be systemic conditions that are of importance in gallstone formation. New evidence has lately been presented by McMaster[2] of the Rockefeller Institute for Medical Research showing that, contrary to much of the current belief, the output and concentration of cholesterol in the bile are subject to profound modification by dietary influences. This is true independently of any elaboration by the gallbladder, which may readily be ruled out experimentally by operative exclusion.

When a ration rich in cholesterol is given, the amount of the substance in the bile greatly increases. What is particularly significant is that the concentration of this difficultly soluble substance in the bile may be increased. This fact gives new importance to the statements of Wilensky and Rothschild,[3] for example, that in many cases of cholelithiasis the dominant factor is a disturbance in cholesterol metabolism. Hypercholesteremia may be present. Operative intervention and drainage may remove the obstructions and permit the cholesterol values in blood and bile to fall to normal. There are patients, however, who develop postoperative symptoms directly referable to a renewed hypercholesteremia. In many such it has been found possible to effect a control by dietetic measures. This involves adherence to a regimen from which products rich in fats and the lipoids that they carry are excluded as far as feasible. The recognition of such metabolic factors, which have heretofore been neglected, promises to prevent recurrence of symptoms in many patients and to modify the treatment of cholelithiasis both before and after operation.

The conditions thus discussed do not apply, however, to all phases of the gallstone problem. If it is true that the cholesterol of the bile has only one important source, the liver cells, it seems equally probable that calcium, another prominent component of biliary concretions, is secreted by the lining of the bile passages as well as by the liver. Furthermore, according to Drury's[4] observations, the normal gallbladder, far from secreting calcium into the bile, as some have supposed, acts to remove this element from the secretion. The administration of large quantities of calcium salts either by mouth or intravenously does not seem to alter the biliary output of calcium. Doubtless in the case of this substance the reaction of the bile, which is subject to considerable change, may modify its solubility and thus influence the possibility of the precipitation that precedes gallstone formation.

ENDOCRINOLOGY AND THE MAMMARY GLAND

THE JOURNAL and the Council on Pharmacy and Chemistry are sometimes accused, particularly by those who may profit from the antagonistic point of view, of being unprogressive, or even intolerant with respect to some of the claims of so-called endocrinology. The scientific attitude is not unsympathetic toward activities that indicate real progress or toward products that offer at least a reasonable expectation of merit. However, any one would have to be oblivious to the history of medicine who would fail to realize the uselessness, if not actual harm, that may attend the enthusiastic exploitation of agencies that cannot meet the tests of rigorous examination. We are usually content to favor some recognition of whatever in the domain of therapeutic innovation gives a reasonably promising account of itself, since there are many features of scientific discovery that call for extensive clinical application under diverse conditions before a final decree of usefulness can properly be authorized.

1. Findlay, A.: Physical Chemistry for Students of Medicine, New York, Longmans, Green & Co., 1924, p. 197.
2. McMaster, P. D.: Studies on the Total Bile, VI, The Influence of Diet on the Output of Cholesterol in the Bile, J. Exper. Med. **40**: 25 (July) 1924.
3. Wilensky, A. O., and Rothschild, M. A.: Studies in Cholelithiasis, IV, The Late and Permanent Results of the Various Types of Operation on the Biliary Passages, with Especial Reference to the Cholesterol Metabolism, Am. J. M. Sc. **168**: 66 (July) 1924.
4. Drury, D. R.: Studies on the Total Bile, VII, Conditions Influencing the Calcium Content of Bile, J. Exper. Med. **40**: 797 (Dec.) 1924.

Such an attitude must not be taken to imply either an undiscriminating acceptance of ambiguous answers or a willingness to relieve a promoter of the burden of proof. That conservatism is often well justified is illustrated anew by some of the trends of recent investigation. Adverse reports have recently been published [1] in regard to alleged functions of preparations of the mammary gland. A survey of the literature might lead one to believe that the activity of this structure is in some way related to the menstrual function and that the gland exerts an inhibitory effect on the ovary. Yet carefully controlled administration of mammary gland substance by Charlton and Rickey to women of reproductive age has failed to furnish evidence of constant effects, if any, on ovarian activity or on the character of the menstrual flow in persons with normal or abnormal menstrual histories. The investigators frankly state that the mammary substance is of no practical value from a clinical standpoint in abnormal subjects in whom the abnormality is supposedly due to "ovarian hyperactivity."

Charlton, Rickey and Lee,[1] who are responsible for these studies, have also tested on experimental animals the possible influence of mammary substance on the estrual cycle, since disturbances in the menstrual function are said to coincide with periods of mammary activity. They point out that the therapeutic use of mammary gland substance postulates an artificial augmentation of a circulating mammary hormone. The experimental results were entirely negative. In no instance was any effect of feeding mammary gland apparent. Obviously, such an outcome is not necessarily conclusive; but we agree with the investigators that it casts an added burden of proof on the proponents of the hormone theory. The facts at hand fortify the decision of the Council on Pharmacy and Chemistry of the American Medical Association to omit mammary gland preparations from New and Nonofficial Remedies because there is no clear-cut evidence to show that administration of available products is of value.[2] A speaker [3] addressing an audience of persons devoted to the study of internal secretions recently remarked that in practically all fields of human endeavor, progress is the difference in the ground covered between advance and retreat. He adds, with particular reference to our present topic, that much which has been offered as new cannot withstand the test of long continued trial and must be retracted or rescinded, leaving only a modicum to represent the real net value of the forward movement. There is timeliness in the reminder that ill considered advances sometimes cost a large toll of human life or misery. It is usually far better to plan progress with greater foresight, so that a retreat will not become necessary after irreparable damage has been done.

1. Charlton, P. H., and Rickey, Edna: A Clinical Study of the Effects of Mammary Gland Substance on Uterine Function, Endocrinology **8**: 672 (Nov.) 1924. Charlton, P. H., and Lee, M. O.: The Effect of Feeding Mammary Gland Substance on the Oestrus Cycle of the Rat, ibid. **8**: 770 (Nov.) 1924.

2. Puckner, W. A.: Mammary Gland Preparations, J. A. M. A. **83**: 2018 (Dec. 20) 1924.

3. Timme, W.: Relation Between Clinical and Experimental Endocrinology, Endocrinology **8**: 719 (Nov.) 1924.

Current Comment

THE REORGANIZATION BILL AGAIN

January 30, Senator Smoot of Utah moved that the Senate proceed to consider the so-called reorganization bill, S. 3445, already discussed in THE JOURNAL.[1] The bill proposes to tear the Public Health Service from its moorings in the Treasury Department and to launch it as a part of a new craft, in a bureau devoted primarily to "education and relief." The motion to take this bill up for enactment in the dying hours of an expiring Congress fortunately was defeated. The defeat must not be accepted, however, as having put a final quietus on the bill, and an effort will probably be again made to obtain consideration. If it should pass the House of Representatives, where it is now on the calendar as H. R. 9629, it may come before the Senate with added prestige. A resolution, H. Res. 395, has already been introduced by Representative Mapes of Michigan, to give the bill the right of way in the House. Senator Smoot, in supporting his resolution, charged that "many leading men of the country who are interested in the public health of the nation are opposed to this measure because of the fact that they have never taken into consideration what the bill proposes to do in relation to the Public Health Service." Unfortunately for Senator Smoot's charge, that is exactly what they have taken into consideration—and that is why they are protesting. Senator Smoot, in answer to letters objecting to the bill, had stated, he said, "just what the bill provides," and then received replies that his correspondents had no objection. It would be interesting, of course, to know just what presentation of the case produced such a sudden change of opinion, but it is immaterial. If this bill is passed, the meaning of the law must be found within the law itself. The Public Health Service will be removed from the Treasury Department and incorporated in a bureau in the projected Department of Education and Relief. No other agency of the government recognizable as a health agency is to be transferred to the new bureau or even to the new department. There will be appointed an assistant secretary for public health to look after the affairs of the new bureau. That is all the pending bill calls for so far as the public health activities of the government are concerned. The proponents of this measure may have intended to write something more into it. Unfortunately, that does not help the matter. Occult meanings should be made clear, so that all may understand; not merely the fortunate few who were engaged in drafting the bill. The criticisms brought against the bill have in no way been met. Enactment in its present form may be

1. Reorganization of Federal Health Activities, editorial, J. A. M. A. **83**: 2021 (Dec. 20) 1924; Threatened Transfer of the Public Health Service, Current Comment, ibid. **84**: 123 (Jan. 10) 1925.

counted on to delay indefinitely a rational reorganization of public health activities. Physicians and all other public spirited persons, individually and as organizations, should at once protest to their Senators and Representatives against such a miscarriage of legislation. Protests already made should be renewed and made stronger.

FINANCIAL ASSISTANCE FOR NEEDY MEDICAL STUDENTS

A movement is on foot at Washington University, St. Louis, to establish a permanent scholarship loan fund to help medical students who would be unable to continue their medical education without such assistance. One million dollars is to be raised, of which $120,000 has already been subscribed. The plans for raising this fund provide three ways by which donations may be given: (*a*) in terms of one or more scholarships at $200 a year for four years; (*b*) in endowment gifts, and (*c*) in various sums as simple contributions to the fund. No better investment could be made by those having money to give to worthy purposes. The standards of medical education have been rapidly advanced during the last twenty-five years, and the charges to medical students have also been doubled or trebled. The advance in tuition fees does not even approach the actual cost of furnishing the education—the difference being met from state appropriations or private endowment. It has been gratifying to note that with these essential advances in tuition, there has also been established an increasing number of scholarships and loan funds for deserving students, but more of them are needed. No student who has demonstrated his real scholarship and merits should be permitted to discontinue his instruction merely for a lack of financial assistance, nor should such assistance in any way be considered as a charity. It is of great importance to the public that those who mentally are best qualified to become practitioners of medicine should be enabled to do so, regardless of their financial status.

THE DEATH OF ERNEST H. BAYNES

Announcement is made of the death of Ernest Harold Baynes of Meriden, N. H., author, lecturer, humanitarian and friend of medical progress. For the last quarter of a century, Mr. Baynes devoted himself to studies of animal life and to lectures on similar subjects. Naturally, he came in contact early with the fanatical opponents of animal experimentation; but, with a mind that was unusually clear, he determined to seek the actual facts for himself in the great centers where experimentation on animals is used to promote knowledge of disease and the health of mankind. Mr. Baynes became convinced, from personal investigation, that animal experimentation is conducted in a humane manner and is essential to the progress of medical science. He therefore alined himself against the fanatical opposition, and became recognized as a leader of the public in this field. When the notorious Hadwen toured this country a few years ago, Mr. Baynes opposed him with a suavity and literary skill that did much to discredit the antediluvian views of the British propagandist. Some five or six months before his death from cancer, Mr. Baynes knew that the outlook was hopeless and that he would hardly survive the year. Nevertheless, he wrote the article now appearing in *Hygeia,* which gives his personal experiences in campaigning against the antivivisectionists, and recounts the bitterness with which he was attacked. One of the greatest services of Mr. Baynes to medical science was his invaluable assistance in organizing the group known as "The Friends of Medical Progress" during the latter part of 1923.[1] The objects of this society are: (1) to encourage and aid all research and humane experimentation for the advancement of medical science; (2) to inform the public of the truth concerning the value of scientific medicine to humanity and animals; (3) to resist the efforts of the ignorant or fanatical persons or societies constantly urging legislation dangerous to the health and well-being of the American people. It is headed by such men as Charles W. Eliot, ex-president of Harvard University; James R. Angell, president of Yale University; Cardinal O'Connell, the Hon. Charles E. Hughes, and others of equal standing. Mr. Ernest Harold Baynes was the unanimous choice for its field secretary, and his untimely death will be felt by the proponents of this organization. America needs more men of the type of Ernest Harold Baynes: intelligent laymen who can see the truth and who are willing to help in extending it to the public.

BARBITAL AND UNESSENTIAL MODIFICATIONS

Elsewhere in this issue is reproduced an editorial comment[2] from the *British Medical Journal* discussing the multiplicity of barbituric acid hypnotics which English physicians are importuned to prescribe. In America a similar condition exists. The numerous barbital derivatives and mixtures of these with other drugs result from the fact that we have no satisfactory method of evaluating the hypnotics. Apparently the proprietary interests have taken advantage of this situation, so that the proponents of these barbital derivatives claim various specific advantages for them. British physicians complain of the many market names for substances having practically the same action, yet with no indication of their derivation from the original and best known drug, barbital. The physician, so states the *British Medical Journal,* is confused by this nomenclature, as he "may turn to an alternative drug only to find it is practically the same thing under another name." In this country the Council on Pharmacy and Chemistry provides information concerning the composition and actions of just such products. It is interesting to note that of the many barbituric acid hypnotics, the Council has accepted only two: barbital, introduced as veronal, and phenobarbital, obtainable on the marked under the name luminal.[3] Until scientific investigators have devised a satisfactory evaluation of this class of hypnotics, it would be much more in

1. Now the American Association for Medical Progress, 370 Seventh Avenue, New York.
2. Barbital (Veronal) and Barbital Compounds, this issue, p. 465.
3. Also accepted are the soluble sodium salts of barbital and phenobarbital.

keeping with scientific advancement if proprietary houses would not seek to push new derivatives, and if physicians would limit their prescriptions—if such hypnotics are indicated—to the two drugs barbital and phenobarbital. Mixtures of antipyretics and barbital compounds are also exploited as "new hypnotics" with claims equally unsupported. Prescriptions for such mixtures may be written instead. Furthermore, the danger to the public of the use of barbital hypnotics is of growing concern. Barbital itself has been the cause of many accidental deaths, and its use is not free from addiction.[4] In 1918, the authorities in England placed barbital in the poison schedule;[5] somewhat later the New York Sanitary Code was revised, so that none of the barbital derivatives may be obtained there except on prescription.[6] It is not surprising, therefore, to note that the British home secretary is now considering further restrictions on self-drugging with the barbital products by the public, and in this is receiving the active support of the British Medical Association. Physicians both here and abroad may well stop to weigh the need of a hypnotic before prescribing the perculiarly potent barbital products.

DIPHTHERIA AT NOME

At Nome, in Alaska, diphtheria became prevalent. Such antitoxin as was available was old, and even this was quickly used up. Pleas were sent for millions of units of fresh antitoxin. The little village, with some seven hundred white and three hundred Eskimo inhabitants, including two hundred children, was icebound. The antitoxin must perforce be carried to it by dog teams or by aeroplane. Now began one of those dramatic races with death that holds the mind of man spellbound. Day by day the press chronicled the slow movements of the fastest dog teams in Alaska en route to Nome. Day by day the public awaited the message that the siege of the elements had been lifted and that the aeroplanes were on their way. And we know that with diphtheria each day, indeed, each hour, of delay may mean the difference between life and death. But bear in mind one fact! In time of stress the world turns to scientific medicine and discards every shred of trifling doubt. The incident at Nome is a catastrophe—but it has served a good purpose in dramatizing for the world the service of medical science.

4. Veronal (Barbital) Addiction, J. A. M. A. **74**: 544 (Feb. 21) 1920. Leake, W. H., and Ware, E. R.: Barbital (Veronal) Poisoning, this issue, p. 434.
5. Veronal Classed as a Poison by England, J. A. M. A. **70**: 953 (March 30) 1918.
6. Veronal on Prescription Only, Druggists' Circular, December, 1922, p. 493.

Place of Preventive Medicine in Curriculum.—And now the whole medical curriculum has been revised with the definite object of permeating the entire period of study by the principle of prevention; every subject, from applied physics, chemistry, biology and anatomy, up to the clinical courses is to be taught with a view to the maintenance of health as well as the cure of disease. The teachers themselves will, perhaps, have to develop a new orientation, and the outdoor department or dispensary will often be a better field for instruction than the hospital ward.—McVail, J. C.: *Proc. Roy. Soc. Med.* **18**:8 (Dec.) 1924.

Medical Economics

THE PHYSICIAN'S INCOME TAX

The Revenue Act of 1924, which became effective, June 2, 1924, differs from the Revenue Act of 1921 in many respects, but none of the differences relate specifically to physicians. A feature of peculiar interest to physicians, however, is the lower tax rate the new act establishes on "earned income"—such as income from professional fees, salaries and wages—as distinguished from income on capital. The reduction in surtaxes may be of interest to the few physicians who are fortunate enough to come within the class required to pay such taxes. Full information concerning these and other matters of general interest appears on the official blank for returns, or can be obtained from the local collector of internal revenue. The discussion here must be limited largely to matters relating specifically to the medical profession.

WHO MUST FILE RETURNS

Returns must be filed (1) by every person having a net income for the taxable year of $1,000 or over, if single, or if married and not living with husband or wife; (2) by every person having a net income for the tax year of $2,500 or over, if married and living with husband or wife; and (3) by every person having a gross income of $5,000 or over, regardless of the amount of his net income. If the aggregate net income of husband and wife, living together, was $2,500 or more, or their aggregate gross income was $5,000 or more, each may make a return or both unite in making a joint return. If the marital status of a tax payer changed during the tax year, the amount of income necessary to bring him within the class required to make returns should be ascertained by inquiry of the local collector of internal revenue.

It is merely as a matter of courtesy that blanks for making the returns are sent to tax payers by the collectors of internal revenue, without request. The fact that such a blank has not been received excuses no one from making a return. If a blank has not been received, the tax payer should obtain one from the collector of internal revenue in the district in which the tax payer resides.

GROSS AND NET INCOMES: WHAT THEY ARE

Gross Income.—A physician's gross income is the total amount of money received by him during the year from professional work, regardless of the time when the services were rendered for which the money was paid, plus such money as he has received as profits from investments and speculation, and as profits from other sources.

Net Income.—Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged must be deducted from the gross income, in order to determine the net income on which the tax is to be paid. An exemption is allowed, too, the amount of which depends on his marital status during the tax year, as stated above. These matters are fully covered in the instructions on the tax return blanks.

Earned Income.—In view of the lower tax return on earned income, it is important for the physician to state accurately the amount of his earned income as distinguished from his receipts from other sources. The term "earned income" means professional fees, salaries and wages, and other amounts received as compensation and personal services actually rendered. Against this, in the computation of the tax, must be set off certain "earned income deductions," and the result is the "earned net income." If the tax payer's entire net income is not more than $5,000, his entire net income shall be considered to be earned net income. If his

entire net income is more than $5,000, his earned net income shall not be considered to be less than $5,000. But in no case shall the earned net income be considered to be more than $10,000. The law prescribes various conditions relating to the computation of the tax on earned income, too elaborate to be stated here. In case of doubt, physicians may consult the collector of internal revenue.

DEDUCTIONS FOR PROFESSIONAL EXPENSES

A physician is entitled to deduct, in computing his income tax, all current expenses necessary in carrying on his practice. The following statement shows what such expenses are and how they are to be computed in determining the amount to be deducted:

Office Rent.—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in his dwelling house or apartment, he may not, however, deduct any part of the rent as professional expense; in order to make such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

Office Maintenance.—Expenditures for office maintenance, as for heating, lighting, telephone service and the services of attendants, are deductible.

Supplies.—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies, and the subscription price deducted. Amounts currently expended for books, furniture and professional instruments and equipment "the useful life of which is short" may be deducted, but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

Equipment.—Equipment comprises property of more or less permanent value. It may ultimately be used up, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using"; rather, it wears out. Payments for nonexpendable property or equipment for professional use cannot be deducted. As property of this class may be named automobiles, office furniture, medical, surgical and laboratory equipment of permanent value, and instruments and appliances constituting a part of the physician's professional outfit and to be used over a considerable period of time. Books of more or less permanent value are regarded as equipment, and the purchase price is therefore not deductible.

Although payments for nonexpendable articles or equipment cannot be deducted, yet from year to year there may be charged off reasonable amounts as depreciation, sufficient to cover the lessened value of such property through obsolescence, ordinary wear and tear, or accidental injury. If, however, improvement to offset obsolescence and wear and tear or injury has been made, and deduction for the cost claimed elsewhere in the return, no claim should be made for depreciation. No hard and fast rule can be laid down as to the amount to be deducted each year. Everything depends on the nature and extent of the property and on the use to which it is put. Five per cent. per annum has been suggested as a fair figure for depreciation on an ordinary medical library. Depreciation on an automobile would obviously be much greater. The proper allowance for such depreciation of any property is that amount which should be set aside for the tax year in accordance with a reasonably consistent plan, not necessarily at a uniform rate, whereby the aggregate of the amounts so set aside, plus the salvage value, will at the end of the useful life of the property in the business equal the purchase price of the property or, if purchased before March, 1913, its estimated value as of that date or its original cost, whichever may be the greater. The physician must in good faith use his best judgment and make such allowance for depreciation as the facts justify. Physicians who, from year to year, claim deductions for depreciation on nonexpendable property will do well to make annual inventories, as of January 1, each year.

Medical Dues.—Dues paid to societies of a strictly professional nature are a legitimate professional expense and may be deducted. Dues paid to social organizations, even though their membership is limited to physicians, are personal expenses and not deductible.

Postgraduate Study.—The Commissioner of Internal Revenue holds that the expense of postgraduate study is a personal expense, and therefore not deductible. Efforts are being made to procure a reversal of this ruling.

Traveling Expenses.—Traveling expenses necessary for professional visits to patients are deductible. The Commissioner of Internal Revenue, however, still holds that traveling expenses incident to attendance at meetings of medical societies are merely personal expenses and therefore not deductible. The Association is endeavoring to procure a reversal of this ruling. Physicians who have expended money for traveling expenses to attend meetings of medical societies are advised to make no deduction for the amount so expended, in computing their income taxes under current schedules. They are, however, advised either to make a memorandum on their income tax returns, or to file memorandum therewith, showing in detail the amount so expended. Such memorandum should show that payment of the tax on that amount has been demanded by the Commissioner of Internal Revenue and is made solely by reason of that demand under protest and under duress. The physician filing such a memorandum should retain a copy of it. In event of any reversal of the Commissioner's ruling, physicians who have made such records can more easily substantiate their claims for repayment.

AUTOMOBILES

Money paid for an automobile is a payment on account of permanent equipment, and is not deductible. The expense paid in the operation and repair of an automobile and loss through depreciation are deductible. The cost of maintenance includes money spent for gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeurs' wages, etc. Deductible loss through depreciation is the actual diminution in value resulting from obsolescence and use, and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is in the possession of the present taxpayer. If the automobile is used for professional and also for personal purposes—as when used by the physician for recreation, or used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expenses; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood. What has been said with respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

MISCELLANEOUS

Laboratory Expenses.—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of other corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

Losses by Fire, Etc.—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense, and is deductible, provided evidence of such loss or damage can be produced, but only to the extent that such loss or damage has not been made good by repair and the cost claimed as a deduction.

Insurance Premiums.—Premiums paid for insurance against strictly professional losses are deductible. This includes insurance against damages for alleged malpractice and for injuries by a physician's automobile while in use for strictly professional purposes, and against loss from theft of professional equipment, and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

Sale of Spectacles.—Oculists who furnish spectacles, etc., for patients may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from charges for spectacles, etc.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALASKA

Antitoxin Arrives at Nome.—Three hundred thousand units of diphtheria antitoxin arrived at Nome, February 2, from Anchorage, the last 650 miles of the journey being made by dog teams and sled. More than a million additional units of antitoxin were shipped from Seattle, January 31, by steamship to Seward and then to Nenana by the Alaskan Railroad, where it is due February 7. Arrangements have been made, it is reported, to carry this supply to Nome by aeroplane, if necessary. Up to January 31, five persons in Nome had died from diphtheria, twenty-two cases had been reported, thirty other persons were suspected of having diphtheria and fifty others were contacts. Nome has about 1,000 inhabitants and only one physician.

ARKANSAS

Society to Establish Credit Bureau.—The Pulaski County Medical Society, Little Rock, has decided to establish at once a physicians' credit bureau, which will assemble and distribute to members information pertaining to persons who apparently are wilfully delinquent in paying for medical services.

Personal.—Dr. Ernest W. Prothro, Little Rock, has been appointed director of public health in Pulaski County.—— Dr. Louis L. Marshall, Little Rock, has been appointed a member of the state board of health to succeed Dr. Henry L. Montgomery, Gravelly, whose term has expired.—— Dr. Hugh O. Turrentine, Little Rock, has been appointed by the Near East Relief as head of one of its orphanages and asylums in southern Russia. The appointment is for two years.

Bill to License Osteopathic Practitioner Without Examination.—It is reported that Representative Hollingsworth introduced a bill, January 15, which would authorize one William Meyer of Ouachita to practice medicine without taking an examination. Meyer has been practicing osteopathy in Camden for about two years and wants to practice both osteopathy and medicine. The only William Meyer of which the American Medical Association has record was born in Germany in 1881 and was granted a diploma in 1922 by the Kansas City University of Physicians and Surgeons, a semi-osteopathic affair, whose diplomas are not recognized by licensing boards of forty-eight states. There is no evidence in the Association's files to show that this William Meyer ever attended any reputable medical college.

CALIFORNIA

Osteopaths May Practice Before Industrial Accident Commission.—At a conference of members of the state industrial accident commission and officers of the state board of osteopathic examiners, January 19, San Francisco, licensed osteopaths were given full rights to practice before this commission.

Professional Building Omits Thirteenth Floor.—It is reported that, in view of the general superstition surrounding "13," there will be no thirteenth floor in the fifteen story medical and dental building now being constructed in San Francisco at a cost of about $2,500,000. There will be a garage on the roof which will accommodate 210 cars, and a basement garage with a capacity of 165.——It was announced, January 15, that construction will start at once on a medical arts building in San Diego, which will be eleven stories high and contain a medical library, auditoriums and garage facilities.

Five Hundred Chiropractors Licensed.—The state board of chiropractic examiners granted 500 licenses to chiropractors in various parts of the state following the issue of an order, January 17, in the San Francisco County Superior Court, modifying an injunction granted months ago on application of one Joseph Sanford. Four hundred of these new licenses were involved in the injunction proceedings, the remainder having been held up by the board until questions of authority had been decided. Hundreds of applications are still pending before the board. These are the first licenses to be granted without protest, excluding reciprocity licenses, since the present board was appointed, in February, 1923.

Los Angeles County Health Department.—Nearly 3,000 more cases of communicable disease were reported to this department last year than in 1923, a large part of the increase being due to smallpox, of which there were nearly 1,500 cases as against 368 cases in 1923. The Los Angeles County Health Department functions not only in rural districts but in many incorporated cities of the county. It maintains branch offices at Pomona, Monrovia, Whittier, Alhambra, Redondo, Belvedere and Huntington Park, each being a small complete health department. In 1915 the county health office was a "one-man office," while it has now from 200 to 600 employees, among whom are fifty public health nurses.

Personal.—Dr. Tilton E. Tillman has been appointed a member of the San Francisco County Lunacy Commission to fill the vacancy caused by the death of Dr. Theodore Rethers.——Dr. Virgil G. Presson has been appointed health officer of Orange County to succeed Dr. William Leland Mitchell, who has resigned to go with the International Health Board, New York.——Dr. Kenneth H. Sutherland has been appointed health officer of San Luis Obispo County to succeed Dr. Lucuis F. Badger, who has entered the U. S. Public Health Service.——Dr. Herbert S. Chapman has been elected superintendent of the Physicians' and Surgeons' Hospital, Stockton, formerly known as the Dameron Hospital.——Dr. Alexander M. Lesem has been appointed by the city board of health to act as city health officer of San Diego, subject to certification by the civil service commissioner. Dr. Lesem is also county health officer.——Dr. Frank M. Whiting, Oroville, has been reappointed county physician of Butte County, and Dr. Lewis Q. Thompson, Gridley, reappointed county health officer.

CONNECTICUT

Results with Dochez's Serum in Scarlet Fever.—At a meeting of the Connecticut League for Nursing Education, January 28, Dr. Francis G. Blake presented the results thus far obtained in treating scarlet fever with Dochez's serum. He stated that of thirty-four uncomplicated cases treated on

or before the third day, in one of which the patient was extremely toxic and in coma, three very toxic, eighteen cases moderately severe and twelve mild, all were cured within from twelve to thirty-six hours. Three patients of this group had mild complications later. Ten uncomplicated cases were treated on or after the fourth day, in one of which the patient was extremely toxic and in coma, three very toxic, four cases moderately severe and two mild; all were cured within from eighteen to thirty-six hours. Two patients of this group had mild complications later. Nine complicated cases were treated on or before the third day, of which one case was very severe, six moderately severe and two mild, and all patients were convalescing within from eighteen to forty-eight hours. Nineteen complicated cases were treated on or after the fourth day. One patient with meningitis was cured in forty-eight hours; one with septicemia died; one with septic throat and adenitis was cured; one with measles and mastoiditis recovered; one with typhoid recovered; seven with moderately severe cases were cured within from eighteen to forty-eight hours, and two with mild cases were cured within eighteen hours. The word cure, Dr. Blake stated, refers to the effect of the serum on scarlet fever. Most of those with septic complications remained afebrile, while others had a moderate fever for a few days.

DELAWARE

Society Opposes Twentieth Amendment.—The New Castle County Medical Society, Wilmington, went on record, January 21, as opposing the adoption of the proposed twentieth amendment to the Constitution, which would give Congress power to regulate child labor up until the eighteenth year of age.

DISTRICT OF COLUMBIA

Senate Passes Pure Milk Bill.—The Senate has passed the bill to regulate the sale of milk, cream and ice cream within the District of Columbia. It requires the inspection and grading of farms and herds from which the milk is produced; it permits only milk or cream to be sold which is produced from herds to which the tuberculin test has been annually applied. It vests in the health officer of the District of Columbia power to adopt rules and regulations to enforce the prescribed standards and qualities. It requires milk producers to secure a permit from the health officer of the District, which shall be issued on application in writing, which application shall give a detailed description of the dairy or dairy farm where milk, cream or ice cream is produced. This application shall be accompanied by a certificate signed by an official of the health dpeartment of the District of Columbia or a veterinarian detailed for that purpose, certifying that the cattle producing such milk are physically sound and have reacted negatively to the tuberculin test prescribed by the Bureau of Animal Industry, Department of Agriculture, within one year previous to filing the application. The health officer is authorized to suspend any permit whenever, in his opinion, the public health is in danger by unwholesome milk. Numerous other provisions are contained in the bill for the purpose of insuring purity and richness of milk sold within the District of Columbia.

GEORGIA

Railway Surgeons Honor Secretary.—At the twenty-first annual session of the Association of Seaboard Air Line Railway Surgeons, Sarasota, Fla., Dec. 9-11, 1924, a gold watch and chain and loving cup were presented to Dr. Jarrett W. Palmer, Ailey, in appreciation of his twenty-two years' service as secretary of the association.

Hospital News.—The contract has been let for the contagious disease unit of Grady Hospital, Atlanta. It will cost $50,000.——At the annual election, January 6, Dr. Frank L. Eskridge was elected president of the white unit of the Grady Memorial Hospital, Atlanta; Dr. Montague L. Boyd, vice president, and Dr. William H. Hailey, secretary-treasurer.——Clarke County has purchased the Athens General Hospital, which it will operate. The county will also build a tuberculosis hospital costing about $50,000.

ILLINOIS

Hygeia for High Schools.—The De Kalb County Medical Society unanimously voted recently to pay for a year's subscription to *Hygeia* for each of the twelve high schools of the county.

Whooping Cough Increases.—The state health department announces that the incidence of whooping cough has jumped from an average of fifteen to fifty cases a day since January 1. There were 515 deaths in the state in 1923 due to whooping cough, nearly 80 per cent. of which were in children under 2 years of age.

Dr. Wood Resigns.—Dr. Harold B. Wood, director of health, Bloomington, has tendered his resignation, effective, February 7, to accept a position in the State Health Department of Pennsylvania. Dr. Wood will have charge of the investigation and control of contagious diseases and will be located at Harrisburg.

Chiropractors Fined.—Stanley A. Gracey and Clement Furgeson, Mount Carmel, unlicensed chiropractors, were recently found guilty by a jury, fined $400 and costs and sentenced to six months on the penal farm at Vandalia. Kitty Gracey, Mount Carmel, an unlicensed chiropractor, was found guilty by a jury and fined $400 and costs.

Society News.—Dr. Ralph A. Kinsella, professor of medicine, University of St. Louis School of Medicine, St. Louis, addressed the Rock Island County Medical Society, East Moline, January 15, on "Chronic Rheumatism."——Dr. Carl A. Hedblom, professor and head of the department of surgery, University of Wisconsin Medical School, Madison, addressed the Winnebago County Medical Society, Rockford, January 20, on "Surgery of the Breast."

Smallpox Vaccination Ordinance.—The city council of East St. Louis passed an ordinance, January 19, which excludes from school, teachers, pupils and employees who have no certificates of vaccination or other evidence that they are immune from smallpox. The maximum fine for violation of the ordinance is $200. Smallpox prevails at present in the negro section of the city, twenty-two cases having been reported from January 1 to January 18.

State Society's Lay Education Program.—Since March 19, 1924, the Illinois State Medical Society has enrolled for its lay education campaign 204 physicians, who agreed to discuss medical subjects before lay audiences; and by Nov. 10, 1924, seventy-two physicians had delivered 111 talks throughout the state. There had been at that time thirty-six requests for speakers repeated. A total of 402 talks have been scheduled for the period ending June 15. No speaker discusses cults or quacks. The talks are constructive. Three hundred and three newspapers of a total of 844 in the state have used material furnished by the committee on lay education. Twenty-one talks have been broadcast by radio.

Chicago

The Chicago Crime Commission.—An invitation is extended in the Bulletin of the Chicago Crime Commission (January 22) to citizens of Chicago to visit the commission's office, 21 North La Salle Street, at any time. The crime commission was organized six years ago by the Chicago Association of Commerce, which drafts 130 men as members to serve without pay. It seeks the solution of crime problems. The commission is managed by fifty directors, among whom are several physicians.

Society News.—Dr. William J. Mayo, Rochester, Minn., addressed the Chicago Medical Society, February 4, on "The Relation of the Spleen to Certain Blood Conditions," illustrated by lantern slides. A dinner in honor of Dr. Mayo was given at the Morrison Hotel preceding the meeting.——Dr. Herbert H. Christensen, Wausau, Wis., addressed the Chicago Surgical Society, February 6, at St. Luke's Hospital on "Paralysis of the Deltoid Following Shoulder Injuries."——At a meeting of the Chicago Tuberculosis Society, February 12, at the Municipal Tuberculosis Sanitarium, Dr. Henry Kennon Dunham, Cincinnati, and his associate, Dr. Vera V. Norton, will read a joint paper on "The Roentgen Ray as an Aid in Directing Treatment of Pulmonary Tuberculosis."——Dr. Elmer L. Kenyon addressed the Chicago Laryngological and Otological Society, February 2, Great Northern Hotel, on "Speech Complications in Certain Cases with Unusual Palates—Exhibition of Patients."

INDIANA

Funds for Public Health Nurses.—The number of public health nurses employed in Indiana on Sept. 30, 1924, according to the state board of health, was 273, of whom forty-five were employed in rural public health work, the remainder in cities. Public health nurses cannot be paid from public funds as yet in Indiana. Their services have been provided by

voluntary organizations and private funds. The board believes that the most imperative public health need is that of full-time health departments, especially in the larger counties and cities, and that the present legislature should make it possible for both counties and cities to employ public health nurses through local health departments.

Central Indiana Hospital for the Insane.—A recent report of the superintendent of this hospital shows that of 1,931 patients treated, 4.04 per cent. recovered, while the percentage of recoveries to the number admitted was 24.5. This institution cooperates with the Indiana University School of Medicine, Indianapolis, so that students may attend lectures each week for the study of mental and nervous diseases. The hospital for the "sick insane" has 1,600 patients. The superintendent, Dr. Maxwell A. Bahr, has for years given a course of clinical lectures in forensic psychiatry to members of the legal profession, and, without any charge, to students of law. The course of eight lectures, this year, started February 2, and will continue at intervals of one week until March 23.

KENTUCKY

Veteran Secretary Honored.—Dr. Joseph H. Hopper, Springfield, for twenty years secretary and treasurer of the Washington County Medical Association, was given a banquet by physicians of the county, January 14, in recognition of long and faithful service. Dr. Hopper, on account of ill health, has not been in active practice for several years. He has decided to enter practice again.

Personal.—Drs. Charles E. Francis, Will C. Strother, Bowling Green, and Walter C. Simmons, Smith Grove, have been appointed members of the Warren County Board of Health.——Dr. Lee P. Molloy has been elected president of the McCracken County Board of Health and Dr. Oliver R. Kidd, secretary.——Dr. Joseph E. Wells, Cynthiana, has been reelected president of the state board of health.

LOUISIANA

Personal.—Dr. Charles H. Potts has been appointed house surgeon of the Shreveport Charity Hospital to succeed Dr. Critz F. Lambert.——Dr. Victor C. Vaughan, for many years dean of the University of Michigan Medical School, Ann Arbor, recently addressed the medical students of Tulane University, New Orleans. Dr. and Mrs. Vaughan are motoring by way of New Orleans to California.

Memorial to Dr. Dyer.—At a recent meeting of the Southern Medical Association, a bronze portrait panel, erected to Dr. Isadore Dyer by the faculty of the Tulane University of Louisiana School of Medicine, New Orleans, was unveiled. The memorial address was given by Dr. Rudolph Matas. Dr. Dyer was for many years dean of the medical school and professor of diseases of the skin. He died in 1920.

MARYLAND

Hospital News.—The new $300,000 addition to the Bon Secours Hospital, Baltimore, was formally opened, January 15. Dr. Thomas R. Brown, chief of staff, presided at the exercises. The original building, erected in 1917, together with the new addition, was the gift of Mr. and Mrs. George C. Jenkins to the Sisters of Bon Secours.——Johns Hopkins Hospital, Baltimore, will soon start the construction of a $500,000 nurses' home.

Scarlet Fever in Maryland.—An outbreak of scarlet fever is spreading through the state and in several instances schools have been closed. A seminary at St. Mary's City has been closed, as well as the Gilman Country School for Boys, Roland Park, Baltimore. At Havre de Grace, twenty cases occurred during January, with two deaths. All cases are under quarantine, and the situation is under control. During January last year, 238 cases were reported, according to figures of the health department.

MASSACHUSETTS

Dr. Pratt Resigns.—Dr. George K. Pratt, medical director, Massachusetts Society for Mental Hygiene, has resigned to become assistant medical director of the National Committee for Mental Hygiene, New York City. Dr. Pratt began his work in Boston about three and a half years ago, during which period the Massachusetts Society for Mental Hygiene has established branches in various cities.

Personal.—Dr. Robert McC. Halbach, clinical pathologist at St. Luke's Hospital, New Bedford, has resigned to accept a similar appointment at the Madison General Hospital, Madison, Wis.——Dr. Moses J. Stone has resigned from the Westfield State Sanatorium to engage in private practice.——Dr. Ralph D. Leonard, Boston, has been elected president of the Eastern Section of the American Roentgen Ray Society.

Memorial Meeting.—The Massachusetts Psychiatric Society held a memorial meeting, January 20, at the Boston Psychopathic Hospital in honor of Dr. Walter E. Fernald, the society's first president. Dr. Thomas W. Salmon, professor of psychiatry, Columbia University College of Physicians and Surgeons, New York, with whom Dr. Fernald was closely associated for years, spoke on Dr. Fernald's "National Achievements"; Dr. George L. Wallace, superintendent, Wrentham State School, Wrentham, also long a close associate of Dr. Fernald, spoke on "The Man," and Dr. Albert Warren Stearns on "Psychiatric and Scientific Contributions."

MICHIGAN

Children Under Weight in Detroit.—School children in Detroit's elementary schools, both public and parochial, have been weighed and measured each fall for the last four years, and a special list made of all found to be 15 per cent. or more under weight. These children are then given a complete medical examination by physicians, and those recommended are placed in nutrition classes. About 2,000 children are cared for in these classes each year. The percentage of underweight children for the city as a whole, in 1921, was 7.6, and for 1924, 6.2.

MINNESOTA

Personal.—The governor has appointed Dr. Patrick A. Smith, Faribault, a member of the state sanatorium advisory commission.——Dr. Arthur N. Collins, Duluth, has been elected president of the Associated Charities of Duluth.

Society News.—At the regular meeting of the Hennepin County Medical Society, Minneapolis, February 2, Dr. John P. Schneider gave an illustrated lecture on "A Practical Management for Visceroptosis," Dr. Herbert M. N. Wynne spoke on "Ovarian Dysfunction" and Dr. Chauncey A. McKinlay on "Endogenous Obesity with Report of Cases."

MISSOURI

Report of Library Committee.—The decision of the St. Louis Medical Society to start building operations with the library adds interest to the annual report of the library committee. In the past eight years the library has grown from 16,497 volumes to 23,772, including some books lent by the St. Louis Public Library and the St. Louis Mercantile Library. The library has cost the St. Louis Medical Society, since 1917, a total of $21,717.20. The total registered attendance during that time has been 10,266, and for the last year 1,398, or an average of 116 a month. In the last year, 101 reference lists have been compiled. Most of the requests for references are made by telephone, and the material is ready when the member visits the library. The congestion in the present library has become such that space for books had to be found in other parts of the building.

Grand Jury to Investigate State Board.—Following the publication of a series of articles by Harry T. Brundidge in the St. Louis *Star* concerning irregularities in the licensing of physicians in Missouri, the state board of health adopted a resolution calling on the circuit attorney to make an investigation. Brundidge claims that 150 licenses have been issued in Missouri on questionable credentials and that political influence was used in obtaining licenses for certain persons. He says that credentials which were sold by William P. Sachs, a confessed member of the national diploma mill ring, were accepted by the state board without investigation, and that a large number of persons who were considered frauds by the Connecticut grand jury and whose licenses were revoked in that state, are today licensed to practice medicine in Missouri. Brundidge cites the case of Leland Vand Cochrum, a dentist and former member of the state legislature, who was licensed to practice medicine in 1923 on the basis of a diploma purporting to have been issued by the Pacific Medical College, Los Angeles, a school branded many years ago as a diploma mill, which is now defunct, and was reported as defunct two years prior to 1918, the year Cochrum's diploma was supposedly issued. The license, meanwhile, was reported as revoked after a complaint was made by the American Medical Association. Cochrum admitted that he had never seen the Pacific Medical College nor ever been in Los Angeles, and in answer to the question as to

how he obtained a license to practice in Missouri, replied in part: "Well, I am a good politician." When asked if he knew that the board had since revoked his license, Cochrum said: "No, it really isn't revoked; I've still got it and I'm planning to leave here in the spring and go to a good school and get enough knowledge to back up the diploma." The case of Dr. Anne Golstein, whose Connecticut eclectic license was revoked but who is still licensed in Missouri, is also cited, as well as a letter from Nat Goldstein, formerly circuit clerk of St. Louis, to Dr. Rudolph S. Vitt, then a member of the state board of health, asking him to "do everything in your power to help obtain a medical license for Miss Golstein." According to Brundidge, the applicant obtained a diploma from the St. Louis College of Physicians and Surgeons and went to New Haven, Conn., where she received a license to practice as an eclectic physician, then returned to Missouri and applied to the Missouri State Board for a license in January, 1922. Her certificate of preliminary education is signed by W. P. Sachs, a confessed member of the national diploma mill ring. Sachs testified before the Connecticut grand jury that this certificate was fraudulent and that he delivered it to Dr. Robert P. Adcox, who had paid him $10 for it. Dr. Cortez F. Enloe, who was secretary of the Missouri State Board at the time of Miss Golstein's application for a license, and who is now head of the state board of penal institutions, in reply to a request for a statement from Brundidge, said in part: "I have nothing to say. The records must speak for themselves."

NEW JERSEY

State Board Must License Kinlin.—The court of errors and appeals, January 19, sustained the supreme court in ordering the state board of medical examiners to license John A. Kinlin, Jersey City, to practice chiropractic, its decision being based on that of the lower tribunal. The supreme court held that the intention of the legislature in passing the act was to provide that any person who served in the military or naval forces in the World War, and who, when the act became effective, March 22, 1923, was a student in a legally incorporated college of chiropractic under jurisdiction of the Federal Board of Vocational Training, should be granted a license on graduation without any further requirements.

NEW YORK

Hospital News.—Unity Hospital, Brooklyn, recently opened a new dispensary and clinic.——A new addition, to contain 124 beds, has been planned for the Arnot-Ogden Hospital, Elmira.——A new wing, providing 118 beds, at the White Plains Hospital, Scarsdale, was recently opened.

State to Regulate Sale of Tetra-Ethyl Lead.—The state public health council enacted an amendment to the state sanitary code, January 20, which restricts the sale and distribution of tetra-ethyl lead which is used to make the so-called "ethyl gas." The amendment prohibits the sale or distribution of tetra-ethyl lead except to refineries and bulk stations or gasoline filling stations.

Association Publications Recommended.—The legislative bureau of the Medical Society of the State of New York, in its recommendations for 1925, recommends to the presidents and chairmen of the legislative committees that they endeavor to have their county societies appropriate sufficient funds to pay for subscriptions to THE JOURNAL, *Hygeia*, and the *American Medical Association Bulletin*, that these officers may be kept posted "up to the minute" on medical matters in the state and nation.

Iodized Water at Rochester.—About two years ago, following a survey of Rochester's school children which disclosed 3,844 cases of goiter, the water supply of that city was treated with iodin. A resurvey, recently, by the same group of physicians, disclosed 1,766 cases of goiter. The visible method of detecting goiter was employed. When there was no definite enlargement evident to the eye, the child was recorded as without a goiter. *Health Bureau*, an official publication of the city of Rochester, remarks that relief from goiter in this city is only one result of iodizing the water. There has been noted also an improvement in stature and mental growth in school children.

The Chiropractic Bill.—With few modifications, the same bill that was introduced in the legislature last year to define and regulate the practice of chiropractic has been introduced this year. The committee on legislation of the Medical Society of the State of New York points out that the bill specifically states that the member of the chiropractic society who is to be appointed to the examining board shall not be a doctor of medicine. The bill outlines the course of study that applicants for a degree must pursue including anatomy, histology, embryology, bacteriology, physiology, biological chemistry and other branches, which is apparently an effort to make the qualifications of chiropractic applicants appear as equal to those of applicants for a license to practice medicine.

New York City

Dr. Phillips Honored.—A complimentary dinner will be tendered Dr. Wendell C. Phillips, February 7, at the Fraternity Building, on the occasion of his retirement from active service at the Manhattan Eye, Ear and Throat Hospital. Dr. Edmund P. Fowler will preside.

Medical Center Under Way.—The Joint Administrative Board of Columbia University and the Presbyterian Hospital announce that ground was broken for the new Medical Center, One Hundred and Sixty-Eighth Street and Broadway, January 31, the presiding officer at the ceremony being William P. Parsons, chairman of the board. Nicholas Murray Butler, LL.D., president, Columbia University, Dr. Clarence Floyd Haviland, chairman, New York City Hospital Commission, and Mr. Dean Sage, president, board of managers, Presbyterian Hospital, gave addresses.

The Academy Buildings.—The new group of buildings of the New York Academy of Medicine will be ready for occupancy within three years and will cost about a million and a half dollars. In the main building, which will be six stories high, provision has been made for the New York State Medical Society, the county medical society, the Physicians' Mutual Aid Association, Society for the Relief of Widows and Orphans, the United Hospital Fund and the Hospital Information Bureau. At the annual meeting of the Academy, January 15, lantern views of the architect's plans for the proposed new home at Fifth Avenue and One Hundred and Third Street were exhibited.

Dr. Park Appointed Medical Officer.—Health Commissioner Frank J. Monaghan, chairman, New York City Health Demonstration Council, announced, February 2, that Dr. William H. Park had been appointed medical officer of the health demonstration, and that Drs. Jules L. Blumenthal, Louis I. Harris and Shirley W. Wynne, of the department of health, had been appointed assistant medical officers. These appointments accord with the plan to have the city department of health assume leadership of this demonstration, in which an attempt will be made through the council, private agencies and the Milbank Memorial Fund to reduce preventable disease to a minimum. Dr. Park is director of the public health laboratory, New York City Department of Health, and professor of bacteriology and hygiene, University and Bellevue Hospital Medical College.

Hospital News.—The Cumberland Street Hospital, Brooklyn, which has been undergoing renovation to adapt it to be a section of the city's cancer institute, will be completed promptly by the department of public welfare. Dr. Charles A. Brown has been appointed director of this service. Later, 200 beds will be available.——Through the bequest, by the late Emily Howland Bourne, of $300,000, for a nurses' home, the New York Association for Improving the Condition of the Poor has bought a large house at Babylon, Long Island, which is now ready to be occupied. There are 10 acres of ground near the bay. It will accommodate thirty now, and a nominal charge of $10.50 a week will be made.——At a meeting of the medical board of Beth Israel Hospital, January 9, Dr. Joseph Barsky was elected president; Dr. Harry E. Isaacs, vice president, and Dr. Max Kahn, secretary.——The St. Francis Hospital is building a forty room nurses' training school at Brook Avenue and One Hundred and Forty-Second Street.——Some trustees and many members of the Lenox Hill Hospital Association are trying to have the old name, the German Hospital, restored. A committee, comprising those who desire to retain the present title, and a committee comprising those who want the old name restored, will hold a joint meeting at the hospital, February 16. The hospital was founded more than fifty years ago by German-American citizens.——A fifty-bed maternity hospital will be erected in the spring at Fifth Avenue and Eighth Street as an adjunct to the Jewish Maternity Hospital at 270 West Broadway.——The Victoria Memorial Hospital, which is being erected by residents of Bay Ridge and Fort Hamilton, will be ready for occupancy by June 1.——The sanatorium buildings at One

Hundred and Fiftieth Street and St. Nicholas Avenue have been sold to Dr. Henry W. Lloyd, including the maternity hospital, which has just been completed. Dr. Victor Low has leased the property and will continue to operate the hospital after extensive alterations.

OHIO

Personal.—Dr. Clement L. V. Bell has been elected health officer of Norwalk.——Dr. Lauren N. Lindenberger has been reappointed a member of the board of health of Troy.——Dr. Guy H. Swan has been reappointed a member of the board of health of Bellefontaine for a period of five years.——Dr. Jesse J. Heaton, McCutchenville, has been reelected chairman of the county board of health.

New Tuberculosis Clinic.—At a meeting of the Antituberculosis League of Cleveland, January 20, it was announced that a tuberculosis clinic would be established to be known as the Dr. John H. Lowman Diagnostic Clinic, and that construction on the building will probably begin this year. It will serve as a dispensary as well as diagnostic clinic and be built in a central location. Dr. Lowman, who died in 1919, organized the antituberculosis league in Cleveland twenty years ago.

Society News.—Dr. Joseph Eastman Sheehan, New York, addressed the Cleveland Academy of Medicine, January 23, on the present status of plastic surgery.——Dr. Edward W. Douglas, Wooster, has been elected president of the Wayne County Medical Society and Dr. Robert C. Paul, Wooster, vice president.——At a meeting of the Academy of Medicine of Toledo and Lucas County, February 6, Dr. Jacob E. Tuckerman, president of the Cleveland Academy of Medicine, spoke on "Our Experiences in Cleveland in Medical Organization."——Logan County Medical Society announces, it is reported, that Dr. Leonard A. Ensminger, Indianapolis, chief surgeon, New York Central Lines, addressed the society, February 6; Dr. Edward S. Judd, Rochester, Minn., will speak, February 20, and Dr. George W. Crile, Cleveland, March 6. Dr. Crile will give an illustrated lecture on "Some Important Points of Surgery of the Stomach and Gallbladder."

OKLAHOMA

Annual Banquet.—The Oklahoma County Medical Society gave its annual banquet, January 17, at the Oklahoma Club, in honor of its new president, Dr. Harry Coulter Todd, on which occasion the Oklahoma County dentists and their wives were guests of the society. The governor of the state and the mayor of Oklahoma City were present. Dr. LeRoy Long, dean of the University of Oklahoma School of Medicine, presided.

Society in Advisory Capacity.—The board of education, Oklahoma City, has requested the Oklahoma County Medical Association to appoint an advisory committee from its members to supervise the assignment of cases to various orthopedic surgeons in the city, at the School for Crippled Children, when requested to do so by the parents or guardians. This service is to be without expense to the board of education, and Drs. H. Marion Williams, George R. Tabor and Carroll M. Pounders have been appointed on the committee.

OREGON

Personal.—Dr. John G. Abele has been appointed health commissioner of Portland following the resignation of Dr. George Parrish to accept a similar position at Los Angeles. Dr. Abele was Dr. Parrish's first assistant in the health department, which position will be filled by Dr. James Hunter Wells, who has been second assistant health officer for the last four years.

PENNSYLVANIA

Personal.—Dr. Hamilton C. Wallace has been reelected president of the board of health of Pottsville.——Dr. Robert C. Davis was elected president; Dr. Frank G. Scharmann, vice president, and Dr. Bennett A. Braude, secretary, of the staff of the Conemaugh Valley Memorial Hospital, Johnstown, Dec. 19, 1924.——The trustees of the State Hospital for the Insane, Norristown, have created the office of assistant superintendent, and selected G. Coles Davis, Philadelphia, who has been connected with the Philadelphia General Hospital for several years.——Dr. Eugene H. Mohr, Alburtis, was elected president of the local board of health at the annual reorganization meeting, January 5.——Dr. Rush E. Castelaw, superintendent, Christian Church Hospital, Kansas City, Mo., has accepted an offer to become superintendent of the Williamsport Hospital.

Philadelphia

Dr. Keen Is Eighty-Eight.—Dr. William W. Keen, emeritus professor of the principles of surgery and of clinical surgery, Jefferson Medical College, celebrated his eighty-eighth birthday, January 19. Dr. Keen has practiced medicine and surgery for sixty-five years.

Jewish Charities Drive.—The Federation of Jewish Charities drive closed, January 25, with the original quota of $1,500,000 oversubscribed. The drive was to have been for ten days, but due to reaching the goal, it was concluded earlier. The total subscription was $1,640,000.62, much of which was paid in cash. The number of subscribers was 22,120.

Three Hundred Cases of Scarlet Fever.—An outbreak of scarlet fever prevails in Philadelphia, which is said to have reached its peak, with 300 cases reported. Dr. Wilmer Krusen, health director, issued a statement, January 26, in which he called for closer cooperation of parents. At the Philadelphia Hospital for Contagious Diseases, the census of scarlet fever cases is the third highest in the history of the institution.

TENNESSEE

Hospital News.—The Civic League Hospital, Jackson, was destroyed by fire, Dec. 9, 1924. The patients were removed without injury.

New State Health Commissioner.—Dr. Eugene L. Bishop has been appointed state health commissioner following the resignation of Dr. Charles B. Crittenden. Dr. Bishop has been associated with the state health department as director of the division of rural sanitation, and as assistant commissioner.

TEXAS

Hospital News.—Lamar County has closed a deal for a 25 acre tract, which will be used as a site for the new $125,000 county and city hospital building.

Personal.—Dr. Frank J. Marecic, Flatonia, has resigned as city health officer.——Dr. John H. Fletcher, Wichita Falls, has been appointed county health officer of Wichita County to succeed Dr. Walter B. Adams.

Society News.—At the annual meeting of the Harris County Medical Society, Dec. 20, 1924, Dr. Arthur H. Flickwir was elected president; Dr. Edgar H. Lancaster, vice president; Dr. Jewell C. Alexander, treasurer, and Dr. Felician J. Slataper, secretary.

WASHINGTON

Physicians' Names in Telephone Directory.—At the regular meeting of the Spokane County Medical Society, January 22, Spokane, the society voted to have the executive committee take under consideration a method to obtain the removal of the names of chiropractors, osteopaths and other drugless healers from future lists of physicians and surgeons in the telephone directory.

Medical Society and Contract Practice.—The state having passed a workmen's compensation act in 1912 and the medical aid act in 1917, the King County Medical Society, in its corporate capacity, engaged in contract practice. Under the medical aid law, injured workmen are furnished medical service, ambulance fees, hospital service, special nurse, drugs and appliances, the revenue being provided by a fifty-fifty tax on labor and industry. This professional service may be provided by one of two plans:

(1) The tax may be paid into the state treasury to the credit of the medical aid fund, and paid out by the medical aid board on vouchers executed by the hospital or physician giving the service, the workman receiving the service of the physician of his choice, or (2) the tax may be paid to a contract physician or hospital or hospital association who, in turn, administers the fund and renders the service, the workman having to accept the contractor's services in order to benefit by the law.

Soon after the law became effective, 20 per cent. of the workmen were covered under plan number one, the state plan, and 80 per cent. under the contract plan. After extended deliberation, King County Medical Society decided to enter the contract field, the advantages being that workmen might have a wide range in the choice of physicians and that the interest of the medical profession as a whole might be preserved, and with the hope that the society might acquire a

dominating position in contract practice in Seattle. However, as the state improved its administrative facilities and looked with favor on employers adopting the state plan, successive administrations came to oppose all contract practice, and some were particularly hostile to the King County Medical Society's activities in this field. Those forces have now reversed the ratio so that 80 per cent. of the labor of the state is under the state plan and but 20 per cent. under the contract plan. Since conditions at present do not seem to make it urgent that the society continue its contracts, and since it feels that the interest of the society will not be seriously sacrificed by discontinuing contract practice, but at the same time realizing that the industrial service committee has been an asset as a means of contact between the medical profession and other factors affected by the medical aid act, the Service Bureau, in its report, January 5, submitted recommendations to the board of trustees looking toward inauguration of an industrial relations committee that the profession may still preserve its interest and have a voice in formulating future policies in this field.

WEST VIRGINIA

Personal.—Drs. Samuel H. Burton and George M. Burton, Weston, have been appointed school examiners for the independent districts of that city.——Dr. Floyd F. Farnsworth, formerly of the state department of health, was elected mayor of Milton, January 1.

Medical Buildings Inadequate.—In an address before the Kanawha County Medical Society, Charleston, January 20, Dr. John N. Simpson, dean and professor of medicine, West Virginia University School of Medicine, Morgantown, said that the school of medicine now has but two small rooms for the 110 students in the two classes. From more than 400 applicants for entrance for the current year, only sixty-one students could be selected because of lack of room. Dr. Simpson urged members of the society to assist in improving the situation by supporting any feasible plan to enlarge the medical school and to establish the complete medical curriculum.

WISCONSIN

Society News.—Dr. Edward L. Miloslavich, director of the department and professor of pathology, Marquette University School of Medicine, Milwaukee, addressed the joint meeting of the Milwaukee County Medical and Radiological Societies, January 9, on "Pathology of Diverticulitis of the Colon."

Bills Introduced.—Identical bills were introduced in the house and senate of the state legislature, January 22, which require that persons who treat the sick in Wisconsin have a high school education and training in anatomy, physiology, pathology and diagnosis. Christian scientists and others engaged in healing from a religious standpoint would be exempt from the provisions of the bill, and the legislation would not be retroactive.

PHILIPPINE ISLANDS

Children's Hospital at Manila.—The *Revista Filipina de Medicina* states that a society has been incorporated for the purpose of founding the Masonic Hospital for Crippled Children at Manila.

Society News.—At the Dec. 2, 1924, business session of the Philippine Islands Medical Association, Manila, Dr. Antonio G. Sison was elected president; Drs. Jacobo Fajardo and José Fabella, vice presidents, and Dr. Isabelo Concepcion, secretary-treasurer. The next annual meeting of the association will be Dec. 16-19, 1925. Dr. Casimiro B. Lara was elected delegate to the next annual meeting of the American Medical Association in Atlantic City.

CANADA

Hospital News.—The Royal Victoria Hospital, Quebec, is constructing a new building which will be used as a maternity hospital with a capacity of 200 beds.

Memorial to Physician.—An interesting ceremony took place recently at the historic St. Paul's Church, Halifax, when a bronze tablet in memory of the late Dr. William J. Almon and his wife was unveiled by the lieutenant-governor of Nova Scotia. Dr. Almon, a senator of Canada, died in 1901.

GENERAL

Warning.—A young man, about 20 years of age, 5 feet and 7 inches tall, fair, unusually courteous, has been calling on physicians in the South, attempting to collect payment for subscriptions to THE JOURNAL. Physicians are warned not to pay money to this man, as he is not an accredited representative. All authorized agents of THE JOURNAL carry credentials duly signed by the Secretary of the Association.

Boylston Medical Prizes.—These Harvard Medical School prizes are open to the public and are for the best dissertation on questions in medical science proposed by the Boylston Medical Committee. A prize of $500 and a medal is offered every three years for the best dissertation on the results of original medical research on a subject chosen by the writer. The medal is added to the money prize only when the winning essay shows special originality. Dissertations must be in the hands of the secretary, Dr. Henry A. Christian, Peter Bent Brigham Hospital, Boston, on or before December 31 of the year in which the prize is offered.

The Osler Memorial Volume.—This memorial, which the International Association of Medical Museums has for some time had in preparation, is nearly completed. It will contain about 300 pages, fully illustrated, and will sell for $10. In meeting the cost of publication, the association has been assisted by members of the late Sir William Osler's family and numerous friends. The book will contain general articles, an account of Osler's early life and recollections of his work in Montreal, Baltimore and Oxford. Among the contributors are Dr. W. William Welch, Lieut.-Col. Fielding H. Garrison, Drs. Thomas McCrae, Howard A. Kelly, J. George Adami, Llewellys F. Barker, Sir Thomas Clifford Allbutt, Sir Humphry D. Rolleston, Sir William Hale-White and Sir Arthur Keith.

New Society.—The American Society of Parasitologists was formed in Washington, D. C., Dec. 30, 1924, with the object of encouraging the association of workers in this field for the presentation and discussion of important facts and for the adoption of such measures as shall tend to advance parasitologic teaching and investigation in this county. Members are of two classes, active and foreign honorary. The dues are $1 per year. The following officers were elected: president, Henry B. Ward, Ph.D., professor of zoology and head of the department, University of Illinois, Urbana; vice president, Dr. Samuel T. Darling, Baltimore, secretary-treasurer, William W. Cort, Ph.D., School of Hygiene and Public Health, Johns Hopkins University, Baltimore. The council of the society will be glad to receive suggestions from any one interested in the policies and activities of the new society.

League of Nations Health Committee.—The interchange of public health officials of different nations has been planned by this committee to take place, first, in Great Britain in March, where the officials will spend seven weeks. The second interchange will take place in Belgium in May, and the third in Jugoslavia, the latter government having offered to pay the traveling expenses of all the participants. Japan is making arrangements for a similar exchange in that country in the fall, to coincide with the meeting of the Far Eastern Association of Tropical Medicine.——The health committee of the League of Nations has planned also to study the standardization and improvement of vital statistics so that they will be similar the world over, and permit one nation to compare its work with that of other nations. The health committee has agreed to study four groups of vital statistics: joint causes of death; standard million population; age and sex classifications, and still births.

Senate Passes Up Reorganization Bill.—The Senate by a vote of forty-one to twenty-five has rejected the motion of Senator Smoot of Utah to make the bill reorganizing the executive branches of the government unfinished business. The effect of this vote is to postpone any action on this measure at the present session of Congress. The movement responsible for this proposed reorganization has been under way for several years. It received impetus under the Harding administration and was later approved by President Coolidge in his annual message to Congress. Departmental and bureau heads of the units affected by the proposed legislation, however, have never fully agreed on the specific changes provided in the measure. This fact has been reflected in Congress, and it would appear that the success of the measure in any future Congress will depend largely on its approval by the departmental and bureau heads who are directly affected by its provisions. In the course of a

sharp debate in the Senate on the general merits of the reorganization bill, Senator Carter Glass of Virginia said that within the last few days he had received letters from eminent physicians of the United States bitterly objecting to the proposition to dismantle the Public Health Service and place it in the Veterans' Bureau, where "we have had interminable difficulties for years and years." Senator Glass stated, further, that if Senator Smoot expected to make the reorganization bill the "unfinished business" of the Senate, there would be no chance to enact the legislation in the present Congress, and that the time might better be devoted to measures on which there was prospect for passage.

Thermometer Bill Passes Senate.—The bill to regulate traffic in clinical thermometers was passed by the Senate without objection. The purpose of this legislation is to standardize all clinical thermometers through the United States Bureau of Standards, and thus to eliminate inaccurate thermometers and in a measure safeguard human life. The measure provides that inspections, tests or certifications shall be performed by government authorities, and a reasonable fee charged to make the work self-sustaining. Regulations will be issued under the authority of the Secretary of Commerce, which shall include "specifications, reasonable tolerances or permissible variations which may be allowed and also requirements for designating marks to be placed on the thermometers as may be deemed necessary." The bill provides that thermometers may not be introduced into any state or territory or from any foreign country unless the thermometer has been marked or certified in accordance with the provisions of the bill. It is understood that manufacturers and dealers generally favor the passage of the measure. Among other reasons advanced for the passage of the bill are that clinical thermometers as now used by physicians and hospitals may be purchased at prices ranging from $16 or $18 a gross to prices above $100 a gross. It is claimed that unreliable thermometers known as "culls" are offered for sale. It is stated further that thermometers cannot be accurately tested without the maintenance of an expensive plant for that purpose or submitting thermometers to the Bureau of Standards for test.

Association of American Medical Colleges.—The thirty-fifth annual meeting of this association will be held at Boston, March 5-7, the headquarters being at the Copley-Plaza Hotel. The program will be as follows:

THURSDAY, BOSTON CITY HOSPITAL, 9:30 A. M.

Medical Sociology and Environmental Medicine. Charles P. Emerson, dean, University of Indiana School of Medicine, Indianapolis.

Bearing of Neuropsychiatry on Public Health Problem. Albert M. Barrett, professor of neuropsychiatry, University of Michigan Medical School, Ann Arbor.

Education in Preventive Medicine in Regular Curriculum. Haven Emerson, professor of public health administration, Columbia University College of Physicians and Surgeons, New York.

Teaching of Preventive Medicine. Samuel R. Haythorn, professor of pathology and bacteriology and director of hygiene, University of Pittsburgh School of Medicine.

2 P. M.

Address of President: The Future Practitioner. Ray Lyman Wilbur, president, Stanford University.

Correlation in the Curriculum. Bernard F. McGrath, director of the surgical laboratories, and professor of principles of surgery, Marquette University School of Medicine, Milwaukee.

Teaching of Obstetrics. J. M. H. Rowland, dean and professor of obstetrics, University of Maryland School of Medicine.

Teaching of Physiotherapeutic Measures. W. H. MacCraken, dean, professor and director, Detroit College of Medicine and Surgery.

FRIDAY, 8:30 A. M.

Practical Demonstration in Medical Teaching at Harvard Medical School, Boston University School of Medicine and Tufts College Medical School.

HARVARD MEDICAL SCHOOL, 2 P. M.

Remarks by A. Lawrence Lowell, Ph.D., president, Harvard University.

The Honors Course. Elias P. Lyon, dean, University of Minnesota Medical School.

"Full Time." Frederick T. Van Buren, Jr., associate dean, Columbia University College of Physicians and Surgeons.

The Handling of the Superior Student. David L. Edsall, dean, Harvard University Medical School.

Cooperative Education in Medicine. Newton Evans, president, College of Medical Evangelists, Loma Linda, Calif.

The Curriculum. Fred C. Zapffe, secretary, Association of American Medical Colleges.

Importance of Physical Plant in the Correlation of Teaching in Medicine. Raleigh R. Huggins, dean, University of Pittsburgh School of Medicine.

Better Correlation of Teaching of Science Branches with Clinical Subjects. Henry C. Tinkham, dean, University of Vermont College of Medicine.

Administration of Hospital Medical School. Thomas Ordway, dean, Albany Medical College.

Promotion of Friendliness Between Faculty and Students. Walter L. Nlies, dean, Cornell University Medical College.

An Initiatory Course for Freshmen. Stephen Rushmore, dean, Tufts College Medical School.

The business session will be held at the Boston Medical Library, Saturday, March 7, at 9:30 p. m.

FOREIGN

Centennial of Lisbon Medical School.—The city council of Lisbon recently voted to aid the university in celebrating the centennial of the founding of the medical faculty in June, 1825.

Proprietaries Not to Be Sold Outside Pharmacies.—The German Reichsrat has decreed that henceforth all secret remedies are *apothekenpflichtig*, that is, they cannot be sold elsewhere than in pharmacies. Our exchanges hail this as an important step in the fight against nostrums.

Lord Lister's Microscope.—The microscope used throughout his life by Lord Lister, together with auxiliary appliances and mounted preparations, have been presented to the University of Glasgow by his nephew, J. J. Lister, and will be placed with the microscope of William Hunter in the Hunterian Museum..

Recent Discoveries of Fossil Man.—A series of lectures by Sir Arthur Keith, London, on recent discoveries of fossil man was given at the Royal College of Surgeons of England, ending January 30. In his lecture, January 21, Professor Keith announced that a human skull more than 100,000 years old had been found in Rhodesia, and that it throws a new light on man's earliest history.

Prize for Research on Sympathectomy.—The Copenhagen medical faculty announces a prize of 5,000 kroner for the best work sent in presenting a critical study of the modern surgery of the sympathetic, based so far as possible on individual experiences and research. The competition is restricted to male physicians or medical students in Denmark, Finland, Iceland, Norway and Sweden, and the lists close July 1, 1926.

CORRECTION

"Simplified Arneth Count."—The abstract published on page 230 of THE JOURNAL, January 17, entitled "Simplified Arneth Count," should be credited to an article that was accidentally omitted from the list of papers appearing in the *Journal of Laboratory and Clinical Medicine* (**10**:87-172 [Nov.] 1924). The title of this article is: "Studies in Blood Cell Morphology and Function. IV. The Arneth Count with Supravital Staining Under 'Living Blood' Conditions" by C. N. Colbert, Philadelphia.

Government Services

Congress Authorizes Improvements at Walter Reed Hospital

In the course of consideration of legislation to which no objection was made, the Senate, January 31, passed several bills of especial interest. Among these is the bill providing for additional facilities at the Walter Reed General Hospital, wherein $2,000,000 is authorized for permanent improvements. They include the construction of, (*a*) two wings to the main hospital building, containing wards; (*b*) a rear addition to the main hospital building containing dining rooms, kitchens, wards and a library; (*c*) a laboratory, tuberculosis, observation, infectious and semi-isolation wards. These permanent fireproof improvements will replace the buildings now in use which have been described by Secretary Weeks as "firetraps."

Physical Defects in Army Officers

A summary of the results of the 1924 annual physical examination of army officers has been made in the office of the Surgeon General of the Army. Defective teeth occurred with greater frequency than any other defect, the rate being 244.63 per thousand officers. This represented the number having teeth requiring immediate treatment. During the year there was a large number of abnormalities of the nose and throat, the rate being 143.35 per thousand. This is somewhat less than the rate for 1923. The total incidence of defects was found to be 1,139.20 per thousand—a higher rate than that for 1923 when the rate was 1,003.33. The report shows that the air service officers had the smallest number of defects, while the officers of the quartermaster corps had the greatest number of defects. The annual physical examination conducted by the medical corps of the Army is now a recognized health promotion procedure.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 24, 1925.

The Royal Commission on Lunacy

An important memorandum, prepared by a special commission of the British Medical Association, has been brought before the Royal Commission on Lunacy and Mental Disorders. The principal objects favored in the memorandum are: 1. To meet, as far as possible, the susceptibilities of the public with a view to minimize the objections that prevented patients from accepting proper treatment at the earliest possible moment. 2. To avoid the need for a formal order for mental patients whose symptoms, though acute, were likely to be short lived, in the hope that the recovery of the patient might render such an order unnecessary. 3. To provide opportunities for the treatment, on a voluntary basis, of patients whether in one of the existing types of institution or in hospitals or clinics or under private care. 4. To secure, as far as possible, uniformity of procedure in the certification alike of private and of other patients, and in particular to affirm the advisability of two medical certificates for submission to any judicial authority asked to issue a reception order. 5. To claim for physicians who sign medical certificates under the Lunacy Act the immunities granted to witnesses in courts of law.

Those engaged in the preparation of the memorandum, who were not fully familiar with the law on the subject, had been impressed by the numerous and effective provisions designed for the protection of the patient's rights. Where the law appeared to be defective was in the unsatisfactory character of its terminology, in the differences made in the treatment of patients because of differences in social or financial standing, in a failure to regard the person of unsound mind primarily as a patient—a sick person—and in the failure to provide adequate facilities for treatment without a reception order. Dealing with terminology, the desire was expressed that the term "lunatic" should be discarded. The term "mental hospital" was suggested in substitution for "asylum," the former expressing better the modern attitude toward the treatment of mental disorder. Mental disorders included both grave and mild cases and might be divided into two groups—the mentally unsound and the mentally ailing. The definition suggested was that "persons of unsound mind" should mean persons who by reason of mental disorder might properly be taken charge of and detained for care and treatment while the mentally ailing did not require detention. Provision enabling registered hospitals and licensed houses to receive suitable patients as voluntary boarders should be extended. The advantages of the voluntary boarder system were that it was subject to the consent of the patient and provided for his care and treatment for so long as might be necessary. It avoided or postponed the necessity for a reception order. It was valuable, too, as a transition measure when the patient was recovering from illness, and discharge from the reception order was justifiable, but he still required treatment. With regard to certification, while it had become customary to speak of certification as being the fact that deprived the patient of his freedom, the formal authority was in all cases the order made by the judicial authority, or, in the case of the urgency order, by a relative. The certification was of great importance as evidence, and should be given the status of evidence.

The protection which witnesses in courts of law were entitled to receive should be extended to the physician who signed a certificate. After a careful consideration of the subject, the association was firmly of opinion that the obstacles to the improper reception or detention of patients were such as to render this practically impossible. The risk was rather that, owing largely to pressure from patients' relatives, discharge might be premature.

Comparative Pathology at the Zoological Gardens

The Zoological Society of London has instituted a fellowship of comparative pathology, jointly with the London School of Hygiene and Tropical Medicine. It has long been recognized that the zoological gardens offer a great field for scientific work. In London, however, more advantage has been taken of the opportunities for anatomic research. The late Sir Frederick Treves, and Sir John Bland Sutton, now president of the Royal College of Surgeons, made many important investigations there which showed the richness of the opportunities. Since 1903 there has been a separate pathologist on the staff of the Prosectorium, but none of the holders of the post have been full-time workers, and little more has been done by them than to ascertain and record the causes of death. Dr. H. H. Scott, the new fellow in comparative pathology, has had a wide experience in research and health administration in many parts of the world and has distinguished himself by investigations in the pathology and treatment of sprue. Dr. Scott's fellowship is purely for research, and the opportunity given him by the Zoological Society and the London School of Hygiene and Tropical Medicine is thus unique.

Drunkenness Tests

The tragedy of a man being locked up by the police as drunk and found in his cell dead from cerebral hemorrhage is not unknown. Sir James Purves-Stewart delivered a lecture on "Drunkenness: Its Tests and Medico-Legal Aspects," to the members of the Society for the Study of Inebriety. He said that, with all deference to the learned legal authorities, he would submit the following definition: "A drunken person is one who has taken alcohol in sufficient quantity to poison his central nervous system, producing in his ordinary processes of reaction to his surroundings a temporary disorder which causes him to be a nuisance or danger to himself or others." The total amount of alcohol necessary to produce nervous symptoms varied widely in different cases. The diagnosis of drunkenness was in most cases made by what trade unionists would call unskilled labor, by a policeman; and at the police station the police officer's diagnosis was confirmed or otherwise by the police surgeon. Medical officers varied considerably in their temperament and their susceptibility to the dogmatic suggestions of drunkenness propounded by police constables. But in nine cases out of ten, the policeman's diagnosis was correct. When asked what was the condition of the accused person, the constable usually replied, and dogmatically, "He was drunk." If pressed, he generally said, "He smelt of drink; he was disorderly in his conduct; he spoke indistinctly, and he staggered in walking." Such facts were certainly strong presumptive evidence of drunkenness. But, apart from the smell of alcohol, every one of the foregoing evidences of drunkenness might be found in persons who were perfectly sober. It was easy to understand how an individual with the unsteady gait of locomotor ataxia or of cerebellar or labyrinthine disease, or a patient with dysarthria from bulbar palsy, palatal deficiency or even with a stammer, or another who was nervous or angry or otherwise emotionally excited from a perfectly legitimate cause might quite innocently be charged with being drunk. Among the common maneuvers for eliciting the presence of cerebellar ataxia, a favorite one was to ask the patient to walk along a straight and narrow path, and

then to turn quickly and come back again. The more difficult feat of walking heel and toe along a chalk line was an entirely artificial test which quite a number of sober persons might fail to accomplish. Failure to stand on one leg with the eyes shut was a mild acrobatic feat which the most sober might easily fail to execute during the emotional excitement following police arrest. The most exemplary abstainer might well feel apprehensive if he fell into the hands of a medical officer who exacted so high a standard of cerebellar efficiency. In Sir Purves-Stewart's opinion, disordered articulation, to be of value in establishing the diagnosis of alcoholic intoxication, should be present in the pronunciation of words which the person was likely to use in his ordinary conversation. It was all very well to try an elocutionist, a schoolmaster, or member of a learned profession with "tongue-twisters"; but to expect perfection with such phrases in a chauffeur, a laboring man, or even an ordinary member of society, at a time of emotional shock, was unfair. The important point was not whether a person could perform various feats of elocution or mild acrobatic *tours de force* (unless he happened by profession to be an elocutionist or an acrobat), but whether he was in a fit condition to pursue his ordinary daily vocation in life.

A National Medical Service

A possible development of national health insurance is a whole-time service, which would convert the physician into a state official. The medical profession, except a small minority who hold socialistic views, is entirely opposed to this. Considerable controversy has arisen in the Friendly Societies with respect to the decision of the national conference at Oxford in September, when a proposal for a national medical service was carried by 84 votes to 51. In a circular issued to the lodges of the National Order of Free Gardeners, the general secretary points out a great objection to a scheme that makes for the amalgamation of all medical services with full-time medical officers. It may have a number of desirable features, but it would apparently necessitate the abolition of the free choice of physician by the patient, and would compel each insured person to have the national physician appointed for his or her area whether such physician is satisfactory to them or not. This matter came up for the careful consideration of the board of management at its last meeting, and the members are convinced that if such a scheme is adopted it will in many cases militate powerfully against the speedy recovery of the patients.

BUENOS AIRES

(From Our Regular Correspondent)

Dec. 20, 1924.

Alleged Transmission of Syphilis to Llamas

The lay press has given much space to a paper presented by Drs. Jaureguy and Lancellotti in the Academy of Medicine. The authors asserted that they were able to transmit syphilis readily to llamas, and that it was possible to inoculate these animals through intercourse with human chancre. The animals show secondary and tertiary manifestations. Jaureguy and Lancellotti also referred to their cultures of spirochetes. Through repeated passages, they were able to secure, as they claimed, a curative serum for syphilis in the llama, and also apparently efficient for the human disease (THE JOURNAL, January 24, p. 319). With the exception that Jaureguy pushed rather ostentatiously the use of the Maragliano preparations for the treatment of tuberculosis, and belonged to an institution devoted to this purpose, but now gone out of existence, neither of the authors is known here to have done any serious scientific work.

Cancer Society

There has been organized the Argentine Society for the Study of Cancer, which will have its office in the Experimental Medicine Institute, which, in fact, is a cancer institute. Its officers are: Dr. A. H. Roffo, president; Dr. Jonquieres, vice president; Dr. Astraldi, secretary, and Dr. J. Leyro Díaz, treasurer.

Goiter

A survey, carried out by Dr. J. T. Lewis in the goiter region of Salta and Tucumán, shows that from 86 to 88 per cent. of the school children were affected by the disease. A prevention campaign with iodin has already been organized.

Tuberculosis Institute

Acting on Dr. G. Aráoz Alfaro's suggestion, the directing body of the University of Buenos Aires has decided to open an institute for the study and treatment of tuberculosis. This institute will include a hospital with the necessary equipment, a chair of physiology and a veterinary section, in addition to chemical and physicochemical laboratories, nurses' training school, outpatient department and visiting and educational services. A committee formed by Dr. Aráoz Alfaro, president, and Drs. R. Cárcano, J. Iribarne, A. Raimondt, G. Ibarguren, A. Santamarina and A. Christophersen, has been charged with the collection of funds and the preparation of plans for the new institution. The contributions were started by Dr. Aráoz Alfaro, with a gift of 100,000 pesos ($34,000). A bill has also been introduced in the House of Representatives providing an appropriation of 200,000 pesos ($68,000).

Fellowships

The Alejandro Lustig fellowship, created by the Argentine Biological Institute, has been granted to Dr. Enrique Hug, who will go to the Physiological Institute of Turin, headed by Prof. Herlitzka.——The fellowship granted by the Rizzoli Institute of Bologna was received by Dr. José Valls, who will carry out postgraduate work in orthopedics.

HOLLAND

(From Our Regular Correspondent)

Jan. 12, 1925.

Sterilization of Cattle Food in Relation to the Quality of Milk

Recent researches on the subject of the effect on the nutritive quality of milk brought about by feeding cattle fodder preserved by the electric method (the electrosilo procedure, so called), have been reported to the *Volkswoeding*. Fodder thus preserved, although sterilized, does not seem to have lost its nutritive value, especially as far as the proteins are concerned. From the hygienic point of view, the milk from cows fed such fodder is of good quality both from the physical and the chemical standpoint. As experiments on rats have shown, it supplies sufficient vitamins for the proper nutrition of children.

Pharmaceutic Specialties

At a recent meeting of the Congress of Public Hygiene, a discussion arose on the subject of the manufacture and sale of pharmaceutic specialties. As one of the speakers (M. Hofman) remarked, it is a question that interests not only the Netherlands but all Europe as well. The chemical and pharmaceutic industry has developed enormously during the last few years. Several of the members present recommended that the government take over the control of the manufacture of specialties, and require manufacturers of pharmaceuticals to be either pharmacists or physicians. Furthermore, every product should be accompanied by a statement giving its exact composition, and the sale of pharmaceuticals should depend on a special authorization for each

product. In this manner a strict control could be exercised. All advertising of pharmaceutic products should be supervised, and some physicians recommended that advertising should be permitted only in medical journals and not in the daily press. It will be recalled that a similar proposal was made in France, some time ago, but has not been voted on as yet.

Scarlet Fever

At the meeting of the Permanent Committee of the International Bureau of Public Hygiene, recently held in Paris, the statistical report from the Netherlands showed that, during the last thirty years, the number of cases of scarlet fever notified annually for each 10,000 inhabitants has varied markedly from year to year, but that the record for 1923 was practically the same as it was for 1894. The mortality and the morbidity, however, have steadily decreased. The mortality per 10,000 inhabitants has diminished from 0.27 to 0.03. The morbidity has dropped from 5.57 to 0.78. New cases among the entourage of the patients are due mainly to complications. Considerable doubt is expressed as to the value of terminal disinfection.

Mental Defectives

A statistical study of the mentally defective among school children shows about 1 per cent. are defective. It seems that the incidence among males is higher than among females, for, in Amsterdam, of 1,000 defectives 630 were boys and 370 were girls. As this higher incidence among males can be noted at an early age, it may be assumed that the fact that in psychopathic institutions there are more men than women is mainly due to predisposition. As a rule, the higher percentage of males in hospitals for the insane has been ascribed to the fact that the more active life led by men was more likely to cause disorientation than the more quiet life of women.

BELGIUM

(From Our Regular Correspondent)

Jan. 12, 1925.

Conjunctivitis in Swimmers

Several cases of a peculiar form of conjunctivitis, which was reported from Paris first in 1922, have been recorded in Brussels. It is an acute, follicular conjunctivitis, which is usually unilateral. The right eye is most frequently affected. Terrien attributes this localization to the mode of swimming in vogue at present, the "crawl" so called, in which the right side of the head remains under water. In a few cases the affection is bilateral. At the onset, the eyelids are highly swollen, and the patients complain of a sensation as if there were sand in the eye. The palpebral conjunctiva is the seat of a marked inflammation, follicular in form, and closely resembling the conjunctivitis associated with trachoma, but is different from the latter in that it is confined mainly to the lower culdesac. The bulbar conjunctiva is likewise injected. The preauricular lymph node also is involved, although the cornea remains intact. There is only a slight secretion. The bacteriologic examination remains negative. The cultures throw no light on the causal agent of the affection. From the pathologic point of view, there is no difference between the acute follicular conjunctivitis of swimming pools and acute granular conjunctivitis. The period of incubation varies, averaging about six days. The symptoms do not usually subside until after two or three months.

Dr. Denhaene presented cases before the convention of army physicians recently held in Brussels, and Dr. Gallemaerts brought some of his patients before the Société belge d'ophthalmologie. All of these cases, however, originated in the same bathing establishment. In view of the fact that there is only one source of the infection and the further circumstance that the causal agent is unknown, prophylactic measures are confined to increased vigilance in enforcing the rules of cleanliness, greater care in changing the water frequently, and the addition of antiseptics to the water.

Treatment of Yaws with Bismuth Subgallate

Dr. Miguens has reported to the Société belge de médecine tropicale the results secured in the treatment of yaws by the intramuscular injection of an oily emulsion of bismuth subgallate. Following the articles by Yernaux on the same product, this report seems interesting, especially in view of the fact that the low price of the product makes it possible to use it on a large scale.

Congress of Dermatology and Syphilography

The Société belge de dermatologie et de syphiligraphie has appointed its administrative officers to serve at the congress that is to be held in Brussels in 1926. It has appointed also a committee on organization, of which Professor Morelle is chairman. The questions on the program are: (1) tuberculids, their nature and treatment; (2) herpes and zona; their etiology; (3) purpuras; (4) syphilitic reinfection, pseudoreinfection, superinfection; (5) endocrine affections of heredosyphilitic origin, and (6) the present status of the treatment of lupus.

Roentgen-Ray Diagnosis of Appendicitis

Before the Société belge de radiologie, Dr. Dubois-Trépagne discussed recently the great difficulties and the present uncertainty of roentgen-ray diagnosis of chronic appendicitis. He emphasizes numerous details of technic that are particularly important for the obtaining of a good result, but in spite of a rigorous technic the appendix often remains invisible. Even though the appendix may be frankly visible, the diagnosis is sometimes very uncertain. There are only two signs that have an unquestionable value: when a roentgenogram with a representation of the appendix in the immediate vicinity of the contrast medium is secured, or when the shadow of the vermix persists after forty-eight hours.

BERLIN

(From Our Regular Correspondent)

Jan. 14, 1925.

General Paralysis

Professor Kräpelin, the Munich psychiatrist, delivered recently an address on general paralysis, before the Emperor William society for the advancement of science, of Berlin. He emphasized that, of all known mental diseases, general paralysis, sometimes falsely called softening of the brain, is the only one the demarcations of which have been scientifically established. The first reliable observations on the disease date from the second half of the nineteenth century. As far back as 1856, Esmarch and Jessen began to suspect that syphilis played an important part in the pathogenesis of general paralysis. As time went on, the evidence accumulated until finally, through the introduction of the Wassermann test and the demonstration of the causative agent of syphilis, the spirochetes, in the brain of patients at necropsy (Noguchi, 1912) and then by Forster in the living brain, the last doubts were removed. For some twenty years or more, refined methods have made it possible to demonstrate on the cadaver more readily than on the living patient signs of general paralysis. We have also known since then that the disease may occur in children.

The greater the light that was thus shed on the subject, the greater was the disappointment when it was found that no form of treatment that was efficacious in syphilis would render signal service against general paralysis. General paralysis is not the only form of syphilis of the brain. Another

form, termed simply syphilis of the brain, responds readily to treatment with the usual remedies, such as mercury and arsphenamin. Syphilis of the brain usually occurs much earlier than general paralysis. The quality of the cerebral fluid is different. Necropsy findings also are different. For these reasons, general paralysis has sometimes been designated as metasyphilitic—as a sort of sequel of syphilis. Herein lies the real mystery associated with general paralysis. Are there various kinds of causative agents? So far, only the one has been found, but it has been observed that as high as six persons who had been exposed to the same source of infection have developed general paralysis. In this connection let us recall the rôle of the skin in the formation of forces of defense. A predisposition or preconditions in man have been sought, and it has been established that among many peoples of a lower order of civilization, in spite of the frequent occurrence of syphilis, general paralysis is unknown. However, there are strong objections against the assumption of a race peculiarity. Up to about forty years ago, general paralysis among American negroes was rare, but now the incidence of the disease is said to be as great among the negro as among the white population. The question naturally arises: Does the higher civilization furnish the preconditions for the development of general paralysis? It is only since around 1800 that general paralysis has been at all frequent in Germany. Or is it possible that epidemics play a part? The peoples that are apparently immune to general paralysis suffer a great deal from infectious diseases, as was formerly true of our own people. We may well then ask whether the lack of infectious diseases deprives us of protection against general paralysis, on the assumption that, through the action of such infections, the body is enabled to form a sufficient quantity of defense substances. This question presses us all the more for an answer since we know that severe infections may exert a beneficent influence on general paralysis, as was recognized seventy years ago, at which time the attempt was made by inducing a suppuration of the scalp to bring about an improvement in a patient's condition. Later, killed cultures of pyogenic agents, also tuberculin and similar substances, were injected, until, in 1917, Professor Wagner von Jauregg in Vienna treated his patients by inoculating them with malarial infection. Since that time, others have subjected patients to recurrent fever. It is not yet settled which of the two infections exerts the more favorable influence on the course of general paralysis, but it has been definitely established that, whereas death was almost the inevitable outcome of general paralysis and sufferers from the disease seldom became self-supporting again, even for short periods, the new treatment restores to an earning capacity more than one third of those treated and improves markedly the condition of another third.

Marriages

AYNAUD FOSTER HEBERT to Miss Marguerite Anne Hartson, both of New Orleans, Oct. 22, 1924.

EDLEY HICKS JONES, Vicksburg, Miss., to Miss Anne Tupper Jiggitts of Canton, Nov. 19, 1924.

EDWIN AUGUST SOCOLA to Miss Bessie Wailes Magruder, both of New Orleans, recently.

JAMES FRANCIS CURRY to Miss Winifred K. Baggiore, both of Chicago, Dec. 6, 1924.

ARTHUR VIDRINE to Miss Kathleen Miazza, both of New Orleans, Oct. 28, 1924.

FRIEDA HIRSCHBERG to Mr. Harry M. Lawrence, both of Chicago, January 3.

GORDON B. CARR to Miss Justine Marquardt, both of Sturgis, Ky., January 10.

Deaths

Albert Sidney Priddy, Colony, Va.; College of Physicians and Surgeons, Baltimore, 1886; member of the Medical Society of Virginia, and the American Psychiatric Association; physician in charge of the State Colony for Epileptics and Feebleminded; formerly superintendent of the Southwestern State Hospital, Marion; aged 59; died, January 13, at the Virginia Baptist Hospital, Lynchburg, of Hodgkin's disease.

Amos Abraham Freymann, Kansas City, Mo.; Cincinnati College of Medicine and Surgery, 1874; member of the Missouri State Medical Association; past president of the Jackson County Medical Society; formerly professor of hygiene and preventive medicine, University Medical College of Kansas City; aged 72; died, January 15, at St. Joseph's Hospital, of pneumonia.

William Allen Hollis ✱ Hartford City, Ind.; University of Illinois College of Medicine, Chicago, 1902; member of the American Academy of Ophthalmology and Oto-Laryngology and the Indiana Academy of Ophthalmology and Oto-Laryngology; aged 46; died, January 16, at the Blackford County Hospital, of heart disease.

Oliver J. Furst, Los Angeles; State University of Iowa College of Medicine, Iowa City, 1883; past president of the Kansas Medical Society; formerly lecturer on climatology at the University of Kansas School of Medicine, Rosedale; aged 67; died, January 12, at the Research Hospital, Glendale.

Nelson H. Griffin, Cairo, N. Y.; Medical Department of Columbia College, New York, 1875; member of the Medical Society of the State of New York; health officer of Cairo since 1916; died suddenly, Dec. 25, 1924, at the Albany (N. Y.) Hospital, of diabetes mellitus and angina pectoris.

Edward May Magruder, Charlottesville, Va.; University of Virginia Department of Medicine, Charlottesville, 1884; member of the Medical Society of Virginia; clinical instructor of medicine at his alma mater; on the staff of the Martha Jefferson Hospital; aged 66; died, January 11.

Joseph C. Ohail ✱ Pittsburgh; University of Pennsylvania School of Medicine, Philadelphia, 1893; member of the American College of Physicians; for nearly thirty years on the staff of the Allegheny General Hospital, where he died, January 14, of cerebral hemorrhage, aged 59.

Samuel Ellsworth Allen ✱ Cincinnati; Miami Medical College, Cincinnati, 1888; member of the American Academy of Ophthalmology and Oto-Laryngology; formerly city health officer; on the staffs of the Christ and Jewish hospitals; aged 60; died, January 14, of pneumonia.

John Carlisle Fox, Cleveland; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1907; member of the Ohio State Medical Association; formerly on the staff of the City Hospital; aged 40; died, January 15, of heart disease.

John Wallace Hewetson, Lyons, Ill.; Hahnemann Medical College and Hospital, Chicago, 1897; member of the Illinois State Medical Society; served in the M. C., U. S. Army, during the World War; aged 52; died, January 23, at Highland Park, Mich.

Robert B. Knight, Coudersport, Pa.; Jefferson Medical College of Philadelphia, 1875; member of the Medical Society of the State of Pennsylvania; formerly a druggist; at one time coroner and member of the school board; aged 68; died, January 8.

Robert French Compton ✱ Charlottesville, Va.; University of Virginia Department of Medicine, Charlottesville, 1900; professor of diseases of the ear, nose and throat at his alma mater; aged 49; died, Nov. 21, 1924, following a long illness.

Carson Jefferson Lewis, South Jacksonville, Fla.; Emory University School of Medicine, Atlanta, 1914; member of the Florida Medical Association; city health officer; aged 35; died, January 11, at St. Luke's Hospital, Jacksonville.

Timothy Joseph O'Connell, Rochester, N. Y.; University and Bellevue Hospital Medical College, New York, 1902; member of the Medical Society of the State of New York; aged 48; died, January 11, of angina pectoris.

John Joseph Hughes, New York; Fordham University School of Medicine, New York, 1914; served in the M. C.,

✱ Indicates "Fellow" of the American Medical Association.

U. S. Army, during the World War; aged 36; died, January 9, at the U. S. Veterans' Hospital, No. 81.

Thomas Dick Thompson ✠ Westpoint, Neb.; University of Pennsylvania School of Medicine, Philadelphia, 1873; president of the Cuming County Medical Society; aged 75; died, January 13, of pneumonia.

Frank Taylor Lougee, Lynn, Mass.; Dartmouth Medical School, Hanover, 1887; member of the Massachusetts Medical Society; formerly city physician; aged 62; died, January 6, of cerebral hemorrhage.

J. Grafton Jones, Watertown, N. Y.; University of Buffalo Department of Medicine, Buffalo, 1894; member of the Medical Society of the State of New York; aged 54; died, January 12, of heart disease.

Murray M. Adams, Watertown, N. Y.; New York Homeopathic Medical College and Hospital, 1885; formerly member of the state and city board of health; aged 60; died, January 16, of heart disease.

William S. Howard, Griffin, Ga.; Hospital Medical College, Atlanta, 1910; member of the Medical Association of Georgia; aged 42; was instantly killed, January 14, in a railway accident.

Peter J. Gibbons, New York; Bellevue Hospital Medical College, New York, 1886; past president of the Wayne County (Pa.) Medical Society; aged 63; died, January 17, of cerebral hemorrhage.

Lucien Packard Waldron, Akron, Ohio; College of Physicians and Surgeons, Baltimore, 1882; member of the Ohio State Medical Association; aged 74; died, January 11, of diabetes mellitus.

Edward C. Coleman, Kosciusko, Miss.; University of Maryland School of Medicine, Baltimore, 1885; member of the Mississippi State Medical Association; aged 69; died, Dec. 30, 1924.

George Erastus De Witt, Wolfville, N. S., Canada; Medical School of Harvard University, Boston, 1872; for ten years medical health officer of Wolfville; aged 82; died, Nov. 17, 1924.

Verne Ricard Stover, Batesville, Ark.; University of Arkansas Medical Department, Little Rock, 1911; aged 46; died recently, at Eureka Springs, of cerebral hemorrhage.

William Gibson Cotton, McKees Rock, Pa.; Jefferson Medical College of Philadelphia, 1869; aged 77; died, January 12, at the Ohio Valley Hospital, following a long illness.

Duncan Campbell, West Branch, River John, N. S., Canada; Medical Department of the Tulane University of Louisiana, New Orleans, 1891; aged 77; died, Nov. 17, 1924.

William Hamilton Kirk, Doylestown, Pa.; University of Michigan Medical School, Ann Arbor, 1868; Civil War veteran; aged 84; died, Dec. 30, 1924, of heart disease.

James Charles Kennedy ✠ Brooklyn; Bellevue Hospital Medical College, New York, 1882; on the staffs of St. Catharine's and St. Mary's hospitals; died, January 11.

Richard Edwin Thompson, Anderson, S. C.; Medical College of the State of South Carolina, Charleston, 1868; Civil War veteran; aged 83; died, January 6, of pneumonia.

Edmond N. Carignan ✠ Dover, N. H.; Laval University Faculty of Medicine, Quebec, Que., Canada, 1908; Baltimore Medical College, 1910; aged 33; died, January 14.

Adam Grim ✠ Franklin Grove, Ill.; Rush Medical College, Chicago, 1881; aged 74; died, January 10, at the Lincoln Hospital, Rochelle, following an appendectomy.

William Ross Claybaugh ✠ Grenora, N. D.; University of Illinois College of Medicine, Chicago, 1903; aged 49; died, January 1, of injuries received in an accident.

William Horne ✠ Mount Ayr, Iowa; Chicago Medical College, 1866; president of the Ringgold County Medical Society; aged 81; died, January 22, of angina pectoris.

Clarence Franklin Strother, Johnston, S. C.; Washington University School of Medicine, Baltimore, 1876; aged 69; died, Dec. 25, 1924, of heart disease.

George Boemler, St. Louis; Missouri Medical College, St. Louis, 1883; member of the Missouri State Medical Association; aged 83; died, January 12.

Robert MacMillan, Skippack, Pa.; Medico-Chirurgical College of Philadelphia, 1903; aged 45; died, January 10, of heart disease following influenza.

Louise Newton Miller, Moline, Ill.; Hahnemann Medical College and Hospital, Chicago, 1895; aged 63; died, January 16, of cerebral hemorrhage.

James B. Black, Bamberg, S. C.; University of Maryland School of Medicine, Baltimore, 1872; state senator; aged 75; died, January 9, of heart disease.

Alonzo Theodore Bashford, Wooster, Ohio; Ohio Medical University, Columbus, 1897; aged 66; died, January 13, of carcinoma of the intestine.

James Wallace Sooy, Glendale, Calif.; University of Michigan Homeopathic Medical School, Ann Arbor, 1904; aged 55; died, January 9.

Philip Ernst, Larchmont, N. Y.; Medical Department of the University of the City of New York, 1895; aged 56; died, January 9, of pneumonia.

Willella Howe Waffle, Santa Ana, Calif.; Hahnemann Medical College and Hospital, Chicago, 1886; aged 70; died suddenly, Nov. 12, 1924.

Henry Essig, Spokane, Wash.; University of Pennsylvania School of Medicine, Philadelphia, 1873; aged 78; died, January 1, at New York.

George Edgar Butchee, Oakdale, La.; Kentucky School of Medicine, Louisville, 1894; aged 58; died, January 5, following a long illness.

Harry Warren Shirey, Scranton, Pa.; Medico-Chirurgical College of Philadelphia, 1907; aged 41; died, January 5, at Palm Beach, Fla.

Charles Andrew Keegan ✠ Arlington, Mass.; University of Vermont College of Medicine, Burlington, 1889; aged 59; died, January 15.

Jasper Newton Dicks, Cambria, Iowa (licensed, Iowa, 1887); aged 73; died, Dec. 31, 1924, at Corydon, following a long illness.

John W. Palmer, Black Lick, Pa.; Cleveland Medical College, 1872; aged 75; was found dead in bed, January 14, of heart disease.

Morris H. Strope, Poestenkill, N. Y.; Albany Medical College, 1880; aged 66; died suddenly, in December, 1924, of heart disease.

Harry Hand McGee ✠ Savannah, Ga.; Southern Medical College, Atlanta, 1890; aged 55; died, January 7, of carcinoma of the liver.

H. W. Davis, Augusta, Ga.; Atlanta College of Physicians and Surgeons, 1900; died, January 16, at Atlanta, of pneumonia.

Thomas J. Baskett, Fulton, Mo.; Missouri Medical College, St. Louis, 1862; Confederate veteran; aged 84; died, January 7.

Judson Burpee Black, Windsor, N. S., Canada; Dartmouth Medical School, Hanover, N. H., 1891; aged 82; died, Dec. 9, 1924.

Robert Louis Finnell, Verona, Ky.; Medical College of Ohio, Cincinnati, 1872; aged 80; died, January 5, of heart disease.

Carl Linne Brimi ✠ Cooperstown, N. D.; Rush Medical College, Chicago, 1897; aged 48; died, January 19, of heart disease.

Samuel Collins, Montrose, Iowa; College of Physicians and Surgeons, Keokuk, 1890; aged 61; died recently, of pernicious anemia.

Ellis Phillips, Jacksonville, Fla.; Jefferson Medical College of Philadelphia, 1867; aged 81; died, January 4, at Columbus, Ohio.

William J. Jennings ✠ Thomasville, Ga.; Baltimore Medical College, 1898; aged 51; died, January 6, of angina pectoris.

Edward Brainard Morgan, Glen Ridge, N. J.; Long Island College Hospital, Brooklyn, 1881; aged 72; died, January 13.

Sol A. Steinberg ✠ Louisville, Ky.; University of Louisville School of Medicine, 1911; aged 36; died, January 14.

Edward Curtis Hooper, Winslow, Maine; Bowdoin Medical School, Portland, 1899; aged 51; died, January 15.

Orrin A. Eaton, Rexton, Mich.; American Medical College, Cincinnati, 1888; aged 65; died, Dec. 12, 1924.

Cochran Van Tine ✠ Selby, Calif.; Pulte Medical College, Cincinnati, 1890; aged 67; died, Oct. 27, 1924.

W. E. Tillman, Graysport, Miss.; Louisville (Ky.) Medical College, 1878; aged 71; died, January 2.

Herman P. Grise, Gardner, Mass. (years of practice): died, January 1, of diabetes mellitus.

Warren Henry Young, Eldora, Iowa (licensed, Iowa, 1886); aged 76; died, January 8.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

KARNAK

Another Anti-Volsteadian Nostrum

One of the peculiarities of the enforcement of the Eighteenth Amendment and the Volstead Act is the fact that while the government, rightly enough, spends much effort in its attempts to curb the activities of the rum-runners off our coasts, it, apparently, ignores entirely the vast "home industry" in alcoholics done under the guise of selling home remedies or "patent medicines." THE JOURNAL has previously called attention to various alcoholic nostrums sold in vast quantities and under no restrictions. There was "Lyko," for instance, put out by a distilling company in process of liquidation and extensively advertised and sold all through the Middle West. Lyko contained over 22 per cent. of alcohol, and the A. M. A. Chemical Laboratory found it to be insufficiently medicated to prevent its use as a beverage. Attention has also been called to "Tona-Vin," and to the fact that 50,000 bottles were given away in one city alone to establish its popularity. Tona-Vin was essentially wine (18 per cent. of alcohol) with a dash of wild cherry and a suspicion of bitters. Then there was "Vita-Pep," which, with 16 per cent. of alcohol, a little pepsin, rennin and vitamin B, made a passable cocktail. Repeatedly THE JOURNAL has referred to "Hostetter's Bitters," which still goes strong with an alcohol content of one-half that of straight whisky, namely, 25 per cent. "Tanlac," which the Association's chemists reported was essentially a wine to which had been added some bitters, herbs, glycerin and a small amount of laxative, is alleged to have brought to its chief exploiter a fortune of two million dollars.

Now comes "Karnak," put out by Drug Products, Inc. This stuff admittedly contains 18 per cent. of alcohol by volume. What is not admitted is the fact, to be shown later, that it does not contain enough drugs of sufficient potency to prevent its use as a beverage. The individuals who are back of the Karnak outfit seem to be experts in the exploitation of alcoholic nostrums, for it appears that before floating Karnak they were employed by the Tanlac concern and before that by the company that puts out Wine of Cardui. With such an array of experience and talent behind it, Karnak will doubtless be a great seller.

Some of the claims made for Karnak in the newspaper advertisements, where falsehood is free from penalties, are that it "contains no powerful drugs that only deaden the pain for awhile." The stuff is said to be prescribed and praised by "one of New York's most eminent specialists"! According to the statements on, or in, the trade package, Karnak is "composed of nine of the most beneficial roots, barks and herbs known to medical science." It is "purely vegetable and free from injurious or habit-forming drugs." Analysis shows, as will be brought out later, that the chief therapeutically active drug in Karnak is alcohol, of which there is twice as much as there used to be in champagne. To say that a product whose essential ingredient is alcohol is not "habit-forming" is to deny one of the best established facts of human experience. Yet this statement is made on the trade package of Karnak, a fact that is respectfully brought to the attention of the Department of Agriculture.

THE MYTHICAL "NOTED FRENCH CHEMIST"

In the introductory advertising campaign of Karnak, the statement is made and featured that the product was "discovered by M. Pierre Andre, noted French chemist." No such statement as this appears on or in the trade package, which is subject to the control of the federal Food and Drugs Act. The statement appears only in the newspaper advertisements, where lying is uncontrolled except so far as the conscience of the publishers may care to control it. Correspondence with those in French scientific circles brought the not unexpected statement that there is no noted French chemist by the name of Pierre Andre.

The first broadside of advertising appeared in medium-sized cities of the West and Middle West. The headlines of this series of advertisements ran thus:

"KARNAK, SENSATIONAL NEW MEDICINE NOW ON SALE AT McFARLAND'S."

"Thousands Acclaim the Wonderful Restorative Power of M. Andre's Discovery and Declare it a Boon to Humanity."

So it appeared in the Topeka *Daily Capital*, giving, as will be noticed, the name of the druggist who had the exclusive agency for this alcoholic in that territory. In Kansas City, Mo., the same copy was run in the *Journal*, but the druggist's name was Katz. In Galveston, through the *Daily News*, the public was directed to the Star Drug Store. The Springfield (Mo.) *Daily Leader* carried the advertisement urging the public to go to Knighten's Pharmacy. The San Diego (Calif.) *Union* apprised the citizens of that community that Karnak could be had at the Owl Stores—and so it went. Apparently the sale of Karnak is not pushed in cities the size of New York, Chicago, Boston or Philadelphia, possibly because in those places the ease with which bootleg alcoholics are to be had cuts down the demand for alcoholic "patent medicines."

THE CLASSIC TESTIMONIAL

Following the sensational three-column advertisements which constituted the opening guns of the Karnak advertising campaign, there came a series of advertisements of the classic testimonial type. They could be calculated to keep the product before the attention of those who were looking for something in this line. A study of the testimonials shows a similarity of style that causes one to wonder whether Drug Products, Inc., has a standard form for its devotees to sign. Thus, Mrs. Prettyman of Kansas City suffered from gas on the stomach so that she could hardly breathe; Mr. Bucher of Kansas City would "bloat up as tight as a drum," and Mr. Reeves of Wichita said food "would bloat me up with gas as tight as a drum;" all used Karnak, and the bloating ceased. Mr. Durham of Kansas City suffered from indigestion and nervousness, as did also Captain Chellew until some one brought Karnak to their attention; the captain now eats like a farm hand. Mr. Frank Crites had indigestion and stomach trouble with gas pains and headaches, but after taking Karnak he never felt better in his life. It is difficult to conceive the mental processes of people who will accept testimony of this sort, but the millions spent by nostrum exploiters in giving publicity to these testimonials demonstrate that such testimony is accepted.

Before leaving Karnak advertising, it is worthy of note that in some of the latest advertisements Karnak, instead of curing "stomach troubles," conquers rheumatism. Thus in an advertisement in the Davenport (Iowa) *Times* (right under the program of the Palmer School of Chiropractic radio entertainment) we read:

"Rheumatism Conquered at Last! Andre's Marvelous New Treatment Karnak Gets Right Down to the Root of This Trouble and Drives it Out!"

"That's the wonderful relief Andre's amazing new treatment, Karnak, is bringing to the rheumatic sufferers all over Iowa."

Because of the number of inquiries received, some bottles of Karnak were purchased on the open market and turned over to the A. M. A. Chemical Laboratory. Careful investigation in the laboratory failed to show that Karnak had sufficient drugs in it to prevent its use as a beverage. In order, however, that no injustice should be done the exploiters of this product, the chemical work was checked with pharmacologic experiments. The laboratory report, both chemical and pharmacologic, follows:

LABORATORY REPORT

"Two original bottles of Karnak (Drug Products, Inc., Atlanta, Ga.) were submitted to the A. M. A. Chemical Laboratory for examination. Each bottle contained approximately 7½ fluidounces of a brownish-red liquid having an

aromatic odor, and at first a sweetish, licorice-like, afterward mildly bitter taste. In the circular accompanying the trade package, the claim is made that the preparation is 'purely vegetable' and composed of 'nine of the most beneficial roots, barks and herbs known to medical science.' The name of none of the nine drugs was given. The label on the bottle declared the presence of 18 per cent. of alcohol by volume.

THE TOPEKA DA

KARNAK, SENSATIONAL NEW MEDICINE NOW ON SALE AT McFARLAND'S

RESULTS FROM KARNAK ARE GUARANTEED

President Thorburn, of Karnak Company, and McFarland Drug Company Issue Statement to Public.

Thousands Acclaim the Wonderful Restorative Power of M. Andre's Discovery and Declare It a Boon To Humanity.

HAS HAD PHENOMENAL SUCCESS

Karnak, the sensational new health builder discovered by M. Andre, noted French chemist, is now on sale at the McFarland Drug Store.

A special representative of Drug Products, Inc., who control the celebrated medicine in this country, is present to supervise the opening distribution and consult with those who wish to make personal inquiry regarding M. Andre's remarkable restorative.

The enormous demand for Karnak and its phenomenal success wherever placed on sale has caused the McFarland stores to make extraordinary preparations to serve the public promptly and courteously. A big supply of this new medicine has been ordered to supplement the limited allotment which arrived here yesterday.

Karnak is a purely vegetable medicine of remarkable purity and wonderful efficacy in the treatment of stomach and digestive troubles, weakness, nervousness, rheumatism, kidney disorders, fatigue, loss of appetite, torpid liver, constipation, and other conditions.

STORY OF FORMULA IS GIVEN TO PUBLIC

Famous Restorative Medicine Is the Result of M. Andre's Unceasing Struggle Toward an Ideal Conceived in His Youth.

AUTHORITIES TELL WHAT KARNAK IS

KARNAK WINS STRONG PRAISE OF SPECIALIST

Declares "Results Are Most Gratifying, Not to Say Astonishing," in the Cases of New York and Brooklyn Patients.

Photographic reproduction of the opening broadside advertisement of Karnak. The original was three columns in width and a full page in length. Note the playing up of the mythical "noted French chemist," Pierre Andre.

"Qualitative tests indicated the presence of alcohol, ammonium (NH_4^+), glycyrrhiza (licorice), emodin-bearing drugs, reducing sugars and small amounts of calcium and magnesium. A trace of a substance responding to the usual alkaloidal reactions was detected, but not identified. Tests for quinin, caffein, strychnin, hydrastin, brucin and berberin (drugs sometimes employed as so-called 'tonics') were negative. Other than licorice and an emodin-bearing (laxative) drug, no other vegetable extractives were identified.

"Quantitative determinations yielded the following results:

"Specific gravity at 25 C/25 C	1.019	
"Alcohol	15.56	per cent. by volume
"Solids	10.036	gm. per 100 c.c.
"Ash	0.244	gm. per 100 c.c.
"Total anthraquinones (Daels' method)	0.132	gm. per 100 c.c.
"Total alkaloids	0.008	gm. per 100 c.c.
"Glycyrrhizic acid (from licorice)	0.55	gm. per 100 c.c.

"While the Daels' method for the assay of emodin-bearing drugs has been criticized as not affording an accurate gage of the laxative value of these drugs, it still remains as the best approximation to their value of any chemical method known. According to the results obtained by this method, Karnak does not represent more than about 10 per cent. of aromatic fluidextract of cascara. The results from the assay of the preparation for glycyrrhizic acid indicate about 5 per cent. of fluidextract of glycyrrhiza.

"In order to determine whether or not the preparation possessed marked laxative or other physiologic effects, 60 c.c. (2 ounces, or four doses, equivalent to the amount recommended daily) were diluted with 60 c.c. (2 ounces) of water, the mixture evaporated to the original volume to remove alcohol, and the residue swallowed at one dose by an adult. The result was negative. The foregoing evidence indicates that Karnak contains no active drugs in sufficient amounts to produce physiologic effects in ordinary doses.

"In view of these findings, the Chemical Laboratory obtained the aid of Dr. Hugh McGuigan, head of the department of pharmacology of the University of Illinois. A number of original specimens of Karnak, purchased in the open market, were used by Dr. McGuigan to determine its pharmacologic action. In due time Dr. McGuigan reported:

> 'Tests of the samples of Karnak show that this concoction is not sufficiently medicated to prevent its use as a beverage. This conclusion is based on its action on men and on a dog. Four men ("A," "B," "C" and "D"), varying in ages from 19 to 50 years, took divided doses of Karnak within two and one-quarter hours as follows:
>
> ' "A": 19 yrs.; wt., 156 lbs. Three doses of 30 c.c. (1 oz.) each; total 90 c.c. (3 oz.).
>
> ' "B": 50 yrs.; wt., 175 lbs. Three doses of 30 c.c. (1 oz.) each; total 90 c.c. (3 oz.).
>
> ' "C": 22 yrs.; wt., 220 lbs. Four doses of 60 c.c. (2 oz.) each; total 240 c.c. (8 oz.).
>
> ' "D": 35 yrs.; wt., 175 lbs. One dose of 220 c.c. (7½ oz.).
>
> 'There was some alcoholic effect with these doses, varying from flushing of the face to slight incoordination. No other effect was observed or produced except that with the largest dose — a whole bottleful—there was a slight laxative action.
>
> 'A dog, weighing 7 kg., was given by stomach 163 c.c. from which alcohol had been evaporated on a water bath. There was no effect except a weak laxative action. Three days later this dog was given 2 c.c. fluidextract cascara sagrada (Lilly) followed by 100 c.c. water. This elicited six observed bowel movements of a thin consistency.
>
> 'Three of the men who had taken Karnak took doses of the aromatic fluidextract of cascara sagrada (Fuller-Morrison) as follows: 10 c.c. (about 2.7 fl. dr.), 15 c.c. (about ½ oz.) and 25 c.c. (about ¾ oz.), respectively. The 10 c.c. dose caused a very slight laxative action, while the two larger doses caused brisk catharsis.
>
> 'The laxative action of Karnak, therefore, is considerably less than one-tenth the volume of the aromatic cascara. From a knowledge of the action of cascara, I am of the opinion that an entire bottle of Karnak does not contain the cathartic equivalent of 2 c.c. (about 32 minims) of the fluidextract of cascara.'

"Thus, both the chemical and the pharmacologic reports show that Karnak is not sufficiently medicated to prevent its use as a beverage."

In view of the findings, THE JOURNAL feels justified in asking: What is the Internal Revenue Department going to do about it? Another point of interest: Certain states, independent of federal action, prohibit physicians from prescribing wine or whisky even under the restrictions imposed by the federal laws. Yet, apparently, the same states permit without let or hindrance the unrestrained sale of nostrums whose chief ingredient is alcohol and that are not sufficiently medicated to prevent their use as beverages.

Scarlet Fever Incidence for 1923.—Seventy-seven cities reported 62,308 cases of scarlet fever for the year 1923. The estimated expectancy was 41,471 cases. The case rate in 1923 was 2.07 per thousand. In 1922, seventy-three cities had an aggregate case rate of 1.80 per thousand.—*Pub. Health Rep.* **39**:1667 (July 11) 1924.

Correspondence

"TUBERCULOSIS AMONG SCANDINAVIANS"

To the Editor:—I scarcely think that your answer to an inquiry on this subject (The Journal, January 17, p. 223) was quite as full as it might have been. There are definite differences between people of one nationality and another as to their resistance to tuberculosis. Environment does count, of course, so that one of a resistant race may have this good resistance counterbalanced by bad environment, and one of poor racial resistance may get along splendidly in good environment. Yet differences in races are marked. I might refer to a paper by Dr. Louis B. Dublin of the Metropolitan Life Association published in the *Transactions of the American Tuberculosis Association*, 1923.

In the city of New York and the state of Pennsylvania, the death rates from tuberculosis among Italian born and among Jews are considerably lower than the death rates among native Americans; and from these, the scale ascends until the deaths among Irish born (mostly South Irish) is two or three times as great as among Italians. It is greater even, I find, than the average death rate among negroes in five of the Southern states.

It will be found in this list and in other similar lists that Scandinavian peoples in this country, and also in their own, have higher death rates than prevail among some other peoples. There are doubtless other considerations, but perhaps the most important is the length of time the race has been infected. Roughly, Europe was tuberculized by the Romans, and if Rome is taken as a center, the infections were earlier and more intense the nearer to Rome or the more under the influence of Rome. The European peoples, then, who were within the Roman empire were largely tuberculized, and had a longer time to build up resistance, therefore show a better resistance. The English thus have a resistance much greater than the Irish, and somewhat greater than the Welsh and Scotch. Lowland Scotch and North Irish are pretty much of the Saxon race, which was more in touch with the old Roman world, and so have a resistance far beyond the Highland Scotch and the Southern Irish. The Scandinavian peoples were beyond the Roman pale altogether, and have not yet developed the resistance of peoples tuberculized under the Roman empire. There are, of course, all sorts of cross currents in this matter, as in all movements of peoples; and, needless to say, the Roman center of infection had nothing or little to do with the tuberculizing of Asiatic or African peoples; but it would seem to have had a definite influence on the tuberculization of European peoples, and the consequent variations in their resistance shown even at the present time.

D. A. Stewart, M.D., Ninette, Manit.

INTRADERMAL VACCINATION

To the Editor:—In a reply to an inquiry regarding intradermal vaccination (The Journal, January 17, p. 223) occurs the sentence, "To class the Force method with the intradermal method is likely to be confusing, for his description of the method used appears to be subcutaneous rather than intracutaneous."

I have never published a description of the method used at this university, and I am at a loss to determine on what this opinion is based. Recently I sent a personal communication to Dr. J. C. Geiger of the University of Chicago, giving directions for intradermal vaccination, in which these words occur: "The needle should not enter the subcutaneous tissue, and the bevel should not show through the epidermis. The proper site for an intradermal smallpox vaccination is neither subcutaneous (as in the ordinary hypodermic injection), nor subepidermal (as in the Schick test), but *intradermal.*" I might further amplify this statement by saying that the wheal with depressed hair follicles is produced just as in the Schick test, but the point of the needle is not seen, as advised by some authors in descriptions of the Schick test.

In a recent series of carefully measured intradermal vaccinations, we produced vesicles in 115 of 117 persons. We were unable to see all these persons after the crust had separated, but in forty-eight whose scars were observed, only 4.2 per cent. indistinct scars were noted. The distinct scars were divided into smooth, 31.3 per cent., and typical foveated, 64.5 per cent. Eighty-four per cent. of the scars, however, were less than 8.4 mm. in diameter.

I am not prepared to give a final opinion as to the length of time consumed in the preparation of dilutions. Our dilutions are supplied by the vaccine establishment in rubber capped bottles. A large needle is thrust through the cap and left in place for convenience in rapid filling of the syringe. I have always changed needles between injections, but see no reason why a needle of heat resistant composition might not be used if the vaccine were drawn back into the syringe during the flaming process. In this way the speed of administration to groups would equal that of the Schick or Dick tests.

The reaction produced in the so-called immune group is so different from that in those previously unvaccinated that we have practically discontinued all revaccination of what would have been classed as doubtful cases on the basis of cutaneous vaccination.

We are making some statistical studies as to the appearances after the use of varying dilutions, which we hope to have ready for publication soon.

John N. Force, M.D., Berkeley, Calif.
Associate Professor of Epidemiology,
University of California.

"HELIOTHERAPY IN GENITO-URINARY TUBERCULOSIS"

To the Editor:—In a paper by Nelson A. Myll on this subject (The Journal, Dec. 6, 1924), several deductions were made which are open to question. Notations were made from a paper on renal tuberculosis by Braasch and Scholl to the effect that 77.4 per cent. of the total number of patients operated on at the Mayo Clinic for renal tuberculosis were dead at the end of five years. This is manifestly erroneous, in that but 119 of 847 patients operated on were reported dead, and this includes many patients who died from ten to fifteen years after operation from causes attendant to old age. In other words, the postoperative mortality at the end of five years in the hands of a skilled surgeon should not be more than 20 per cent. The 77.4 per cent. referred to indicates the percentage of the 119 patients reported dead who died within five years after operation.

Dr. Myll deserves credit, however, in calling our attention to the fact that renal tuberculosis is usually part of a widespread tuberculous infection, and also to the value of postoperative care in these cases.

Heliotherapy is undoubtedly a valuable adjunct in the treatment of general tuberculosis. It has been the experience of most observers, however, who have tried various nonsurgical methods of treatment for renal tuberculosis, including heliotherapy, that the best results are obtained by nephrectomy. Furthermore, it has been our experience that the earlier a tuberculous kidney is removed, the better is the prognosis.

W. F. Braasch, M.D., Rochester, Minn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

VARIATIONS IN MATERNAL AND INFANT MORTALITY RATES

To the Editor:—The question has been asked, "Why do Norway, Sweden, Denmark and some of the other countries have a lower maternal mortality rate than ours?" This question also came up as regards the infant mortality rate. Anything dealing with either of these subjects will be of interest.

LUCILE S. BLACHLY, M.D., Oklahoma City.

ANSWER.—There are several factors to be considered concerning supposed differences in the maternal mortality and infant mortality rates in civilized countries:

1. The method of reporting vital statistics is not uniform. For example, the maternal mortality rate is usually based on the number of puerperal deaths per hundred thousand women of child-bearing age. Death certificates do not always make clear whether or not a death is puerperal. Vital statistics of the United States do not record the number of women in convenient age groups, so that we can actually know the number of women at the ages when child-bearing is most frequent. In addition to this, the ratio between the number of married and unmarried women has a bearing on the actual mortality rates not shown by a mere comparison of the number of women in certain age groups. The infant death rate is usually recorded as the number of deaths of infants under 1 year of age per thousand living births. Several statistical errors can arise here. For example, in various countries the definition of a stillbirth differs.

2. Incomplete statistics in one country may give it an apparently higher death rate than is the case. For example, in many states in the United States birth registration area, vital statistics have been kept only recently, and the importance of recording each birth is not generally appreciated. Infant deaths, however, are more completely recorded, because of the necessity of obtaining burial permits. Older nations have kept vital statistics for a longer period and have more accurate returns. Incomplete registration of births gives the United States an apparently higher infant death rate than is actually the case.

3. The death rate for colored mothers and infants is higher in any given locality than for those of the white race. Since the United States has a considerable number of colored inhabitants, this increases the figures for the United States as compared with Norway and Sweden, where the number of colored persons is considerably less. Among the causes for higher death rates among colored infants and mothers are the frequency of rachitic deformities in the mothers and the low standard of hygiene in this race.

4. The United States has a large number of immigrants, many of them coming from less hardy races than the Scandinavian. The southern European people are known to have higher infant mortality rates than the rates among Scandinavians, and this would still hold true for them after immigration to this country. In addition, immigrants in this country are unadjusted to their surroundings, changes in diet, and climate. These factors help to explain the higher death rates in a country with a large population of immigrants as compared with a more homogeneous nation.

5. These death rates also depend on the availability of skilled medical assistance and suitable hospitals.

RESECTION OF SMALL INTESTINE

To the Editor:—What is the greatest length of bowel (small and large intestine included) that has been resected without causing death? What is the longest amount of intestine that has been resected without causing disturbance to the nutrition and health of the patient?

J. ALBERT AVRACK, Roanoke, Va.

ANSWER.—The longest resection of the small intestine was done by Brenner in 1910 (cited by Pirie Watson, *Edinburgh M. J.* **30**:164 [Sept.] 1923). He removed 17 feet 9 inches (540 cm.) of gangrenous bowel in a case of strangulated femoral hernia. The patient not only survived the operation but remained well and even gained in weight. Storp, in 1907, in a case of sarcoma of the mesentery, resected 16 feet 9 inches (510 cm.), the entire ileum and part of the jejunum, from a man, aged 21. J. R. Littlefield (THE JOURNAL, Sept. 13, 1919, p. 835) removed 13 feet (396 cm.) of ileum, leaving 6 inches (15 cm.) of jejunum and 4 feet (122 cm.) of ileum. E. R. McGuire (*Surg. Gyn. & Obst.* **16**:40, 1913) removed slightly more than 11 feet (335 cm.). J. E. Cannaday (*Ann. Surg.* **69**:425 [April] 1919) resected 10 feet (305 cm.) of ileum. Ruggi, in 1896, resected 10 feet 10 inches (330 cm.) from a boy, aged 8. Fantino, in 1896, resected 10 feet 2 inches (310 cm.). A. Solm (*Deutsch. Ztschr. f. Chir.* **181**:403, 1923) collected records of eleven cases in which more than 200 cm. of small intestine was resected. In his own case nearly the entire jejunum and part of the ileum (275 cm.) was resected. Watson reviews the entire literature on resection of the small intestine. Seventy-three cases are analyzed. In forty-one cases, the length resected was between 6 feet 7 inches and 9 feet 10 inches (from 200 to 300 cm.); in twenty-six cases, between 9 feet 10 inches and 13 feet 2 inches (from 301 to 400 cm.); in six cases, between 15 feet 8 inches and 17 feet 9 inches (from 475 to 540 cm.). In only six of these cases was death due to marasmus. It occurred in from twenty-five days to two and a half years after the operation, the patient with the greatest resection being the one to die after two and a half years. A patient with only half as much resection died after seven months. In most of these cases of extensive resection, the patients not only survived the operation but apparently experienced no bad effects from it.

Resections of the large intestine have been done with such frequency and apparently with such good result that it hardly seems necessary to enumerate even a few of the many references on the subject. Arbuthnot Lane is the one who gave impetus to the operation. These patients seem not to suffer from any nutritional disturbance incident to the removal of the bowel.

PHYSICIAN'S INCOME TAX

To the Editor:—I would appreciate your telling me which copy of THE JOURNAL will contain the income tax information. As a special question: Will it affect a physician who does nothing but industrial work?

PHILIP G. KITCHEN, M.D., Logan, Philadelphia.

ANSWER.—See Medical Economics, this issue, page 446. There is nothing in the income tax law of 1924—now in force—that applies to physicians engaged in industrial work as distinguished from other physicians.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 3. Sec., Dr. Harry C. De Vighne, Juneau.
CALIFORNIA: Los Angeles, Feb. 9-12. Sec., Dr. C. B. Pinkham, 906 Forum Bldg., Sacramento.
KANSAS: Topeka, Feb. 10. Sec., Dr. Albert S. Ross, Sabetha.
MAINE: Portland, March 10-11. Sec., Dr. Adam P. Leighton, Jr., 192 State Street, Portland.
MASSACHUSETTS: Boston, March 10-12. Sec., Dr. Charles E. Prior, 144 State House, Boston.
MISSOURI: St. Louis, Feb. 24-27. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.
NEW HAMPSHIRE: Concord, March 12-13. Sec., Dr. Charles Duncan, Concord.
PORTO RICO: San Juan, March 3. Sec., Dr. D. Biascoechea, Box 804, San Juan.
VERMONT: Burlington, Feb. 10. Sec., Dr. W. Scott Nay, Underhill.
WYOMING: Cheyenne, Feb. 9-11. Sec., Dr. J. D. Shingle, Cheyenne.

National Board of Medical Examiners

Dr. John S. Rodman, secretary, National Board of Medical Examiners, reports that from April 7 to Oct. 30, 1924, eight examinations in Part III in various subsidiary centers established in fifteen large cities in different parts of the country have been held. The 114 candidates listed below have successfully passed the three parts of the examinations and served the required year's internship and have, therefore, been granted the certificate of the board. Six candidates failed to pass Part III of the examination.

Name	College	Year Grad.
Alyea, Edwin Pascal,	Johns Hopkins University	1923
Ammarell, John Samuel,	University of Pennsylvania	1922
Anderson, Samuel A.,	Johns Hopkins University	1923
Appel, Bernard,	Tufts College Medical School	1923
Askey, John Martin,	University of Virginia	1923
Batchelder, Philip,	Harvard University	1923

Baumgartner, Conrad J., University of Nebraska....1923
Benton, Roy Wilmot, Harvard University....1922
Bercovitz, Zacharies, Rush Medical College....1923
Bird, Clarence Edward, Harvard University....1923
Bogen, Emil, University of Cincinnati....1923
Boyd, Douglas, Harvard University....1922
Bradshaw, Raymond W., Harvard University....1923
Buckingham, Tracy Willis, Rush Medical College....1922
Buckman, Lewis Taylor, University of Pennsylvania....1922
Burisch, John Livingston, Harvard University....1923
Chambers, Silas Eldrige, University of Virginia....1923
Chandlee, Gertrude Jackson, Tufts College Medical School....1921
Clark, Burton Martin, Harvard University....1923
Clark, Lillian Atkins, Woman's Medical College of Pennsylvania....1923
Closson, Esther Marjorie, Woman's Medical College of Pennsylvania..1923
Coppock, Orion Otto, Emory University....1923
Crump, Jean, Woman's Medical College of Pennsylvania....1923
Cummings, Clarence M., University of Pennsylvania....1923
Curtis, Lawrence, University of Pennsylvania....1923
Davis, Allan L., Harvard University....1923
Deming, Julia, Woman's Medical College of Pennsylvania....1922
Drake, Leo Berthier, Harvard University....1923
Dunn, Halbert Louis, University of Minnesota....1920
Dustin, Cecil Calvert, Harvard University....1923
Eagleton, Arthur Joseph, University of London, England....1918
Eisaman, Josiah R., Harvard University....1921
Elston, Ralph Wickwire, Rush Medical College....1923
Findlater, A. J. M., University of Edinburgh, Scotland....1922
Foord, Alvin George, Rush Medical College....1918
Forbus, Wiley Davis, Johns Hopkins University....1923
Fowle, Lester Perham, University of Pennsylvania....1923
Frank, Ruth Jean, Woman's Medical College of Pennsylvania....1923
Freas, Ella Margaret, University of Pennsylvania....1923
Freas, Harold Malcolm, University of Pennsylvania....1921
Gallagher, John Wesley, Jr., University of Pennsylvania....1923
Gentry, Willard Max, University of Nebraska....1923
Gordon, Donald Covil, Harvard University....1922
Habeck, Edgard A. W., Marquette University....1923
Haggart, William W., Harvard University....1922
Harrison, Tinsley Randolph, Johns Hopkins University....1922
Hayter, Harry Milton, Johns Hopkins University....1922
Heberling, John Atherton, University of Pennsylvania....1923
Hoover, Walter Boyd, Washington University....1918
Hulla, Jaroslav H., Bohemian University of Prague, Cze....1919
Jones, Thomas Banford, Johns Hopkins University....1922
Karelitz, Samuel, Jr., Yale University....1923
Kilborne, Norman Joseph, Rush Medical College....1923
Kittredge, Elizabeth Amanda, Johns Hopkins University....1922
Klemmer, Roland Nickolaus, University of Pennsylvania....1922
Laub, Irene Frances, University of Pennsylvania....1923
Lawson, Theodore Carey, Harvard University....1923
Lohr, Curtis Harry, Washington University....1922
MacDonald, Maxwell Eugene, Harvard University....1921
Maerz, Matilde L., Woman's Medical College of Pennsylvania....1922
Magee, Russell Stuart, Hahnemann Med. Coll. and Hosp., Phila....1923
McClellan, Walter Stuart, Harvard University....1923
McClure, William Lionel, Harvard University....1923
McKay, Robert Witherspoon, Johns Hopkins University....1923
Mehring, Percy Leroy, University of Pennsylvania....1923
Miller, William Lindsay, Johns Hopkins University....1923
Mitchell, Beatrice Elizabeth, Woman's Med. Coll. of Pennsylvania...1923
Moore, Frank Guy, Johns Hopkins University....1922
Mora, Maria Teresa, Woman's Medical College of Pennsylvania....1923
Morris, Ruth M., Cornell University....1923
Mutschmann, Paul Nathaniel, State University of Iowa....1922
Nelson, Esther Serida, Rush Medical College....1923
Neuswanger, Chris Harold, Harvard University....1923
Pack, George Thomas, Yale University....1922
Palomeque, Emilio Jose, University of Pennsylvania....1923
Parker, Herman Richard, Syracuse University....1923
Post, Winfred L., Washington University....1922
Prioleau, William Huston, Johns Hopkins University....1923
Pullen, Richard Woolard, Yale University....1921
Quaintance, Paul A., Rush Medical College....1923
Raytkwich, Mary Magdeline, Woman's Med. Coll. of Pennsylvania..1923
Reed, Marjorie E., Woman's Medical College of Pennsylvania....1923
Richardson, Wyman, Harvard University....1923
Riley, Cathryn V., Johns Hopkins University....1922
Robinson, Hugh Laughlin, Harvard University....1922
Sammons, Mabell, Woman's Medical College of Pennsylvania....1923
Sanders, Miller Abram, University of Pennsylvania....1923
Schlaefper, Karl, University of Zurich, Switzerland....1910
Schrack, Helen Frances, Woman's Medical College of Pennsylvania..1923
Sheldon, Paul B., Washington University....1923
Simmons, James Greenleaf, Harvard University....1923
Sloan, Mary Bailey, Woman's Medical College of Pennsylvania....1922
Smith, Thomas Cook, Johns Hopkins University....1922
Spangler, Paul E., Harvard University....1923
Spurling, Roy Glenwood, Harvard University....1923
Stroy, Herbert C., University of Nebraska....1923
Sullivan, James McGeough, St. Louis University....1923
Thomas, Atha, University of Pennsylvania....1922
Thompson, Malcolm Drake, University of Pennsylvania....1922
Thompson, Vernon Percy, Harvard University....1923
Traut, Herbert Frederick, Johns Hopkins University....1923
Vanderburgh, Alexander, University and Bellevue Hosp. Med. Coll...1923
Vickers, Denver M., Harvard University....1921
Wakeman, Edward Taylor, Yale University....1922
Walker, Edward R. C., University of Edinburgh, Scotland....1921
Walker, Pierre Jaqua, Johns Hopkins University....1923
Whiting, Walter B., Harvard University....1923
Whyte, Kenneth Griffith, Jefferson Medical College....1923
Wilkins, William Thomas, Jr., Harvard University....1923
Winter, Anna Ruth, Woman's Medical College of Pennsylvania....1923
Witherow, Lester Stuart, University of Pennsylvania....1923
Wolff, Harold George, Harvard University....1923
Wylie, Robert Morris, Johns Hopkins University....1922
Zulick, Thomas Cummings, Jr., University of Pennsylvania....1923

FAILED

College	No. Failed
Rush Medical College	2
Johns Hopkins University	1
University of Pennsylvania	1
Woman's Medical College of Pennsylvania	2

Book Notices

ANATOMIE HUMAINE, DESCRIPTIVE ET TOPOGRAPHIQUE. Par H. Rouvière, Chef des Travaux anatomiques à la Faculté de médecine de Paris. Tome I, Fasciculae 1 & 2: Tête, cou et tronc. Pp. 1011, with 520 illustrations. Tome II: Membres, système nerveux central. Pp. 664, with 468 illustrations. Cloth. Price, 190 francs. Paris: Masson et Cie, 1924.

This is an excellent textbook for first-year students. Rouvière is one of the authors of Poirier and Charpy's textbook, and he has left to that larger work the exhaustive consideration of literature and of detail that constitute its special excellence. This book is limited to a presentation of the essential facts of gross anatomy, with such considerations of development, evolution and function as are necessary to bring out fundamental principles of morphology. As ponderous works are discouraging to first-year students, this shorter one written by a scientific anatomist should be welcomed by students who are familiar with French. It is brief, simple and accurate, and it sustains the reputation of French scientists for clearness of presentation. The general plan is a departure from that ordinarily followed. The body is divided into four parts: (1) head and neck; (2) trunk; (3) extremities, and (4) central nervous system. Under each part, bones, joints, muscles, vessels and nerves are treated, and then follows a topographic consideration of the part from an anatomic rather than a surgical or clinical point of view. In the part on the head and neck, special sections are devoted to the sense organs; and in that on the trunk, organs of digestion and respiration are similarly treated. The advantage suggested for this plan is that fewer pages need be turned over to find an account of all the structures in any region. The disadvantage is the absence of a complete account of each system as a whole. Complete accounts with associated morphologic considerations constitute so valuable a part of such works as those of Cunningham and of Morris that the disadvantage seems to outweigh the advantage. Especially good features are the illustrations, and the excellent account of the development of the alimentary canal, peritoneum and genito-urinary organs (twenty-eight pages), and the topography of the parotid region. Rouvière has introduced 950 illustrations that appear for the first time. They are clear and instructive, and constitute a real contribution to anatomic literature. No attempt has been made to use the nomenclature recommended by the International Association of Anatomists—the B. N. A. This is possibly due to the fact that the report of the committee on nomenclature was published in German. Nevertheless the Basle nomenclature is good, and as it is the only internatoinal one, its universal adoption would help the progress of medical science.

NEW VIEWS ON DIABETES MELLITUS. By P. J. Cammidge, M.D., and H. A. H. Howard, B.Sc. Cloth. Price, $6.50. Pp. 611, with 85 charts. New York: Oxford University Press, 1924.

The authors present unusually interesting data on carbohydrate metabolism, discussing the types of hyperglycemia and glycosuria that occur from various causes. Numerous laboratory tests are described which enable one to decide whether one is dealing with a true diabetic condition, i. e., one due to deficient internal secretion of the pancreas, or merely with a hyperglycemia due to other causes. There are five chapters. The first treats of the physiologic processes that influence the blood sugar level. In this chapter a most interesting view is brought forth regarding the sugar tolerance test, and evidence is adduced to show that, since so many variables are concerned in its mechanism, the results of such a test are to be interpreted with the utmost care. The second chapter discusses the abnormal carbohydrate metabolism. Using the data of the first chapter for fundamental principles, the authors show that any abnormality in the numerous factors controlling the blood sugar will produce a hyperglycemia, which, if not checked, eventually will induce a true diabetes because of the strain that such a condition throws on the internal secretory function of the pancreas. In the third chapter are presented the various diagnostic procedures of value in making a differential diagnosis of the

various types of hyperglycemia and glycosura, while the last two chapters deal with different modes of therapy and with the prognoses of a true diabetic condition and hyperglycemias due to other causes. The book is well written. Most of it is clear and well illustrated with charts. It contains numerous case reports which show that although a hyperglycemia with glycosuria exists, the condition is not one of true diabetes. Most of the material is interesting and readable except for portions where technical procedures and hypothetic considerations are presented. Such parts are difficult to follow. Because of the thoroughness of the work, the care of minute details in obtaining the data, and the wealth of excellent material that the book contains, it is well worth reading.

NOTES ON PATHOLOGICAL AND OPERATIVE OBSTETRICS. By Lyle G. McNeile, M.D., Professor of Clinical Obstetrics, College of Medical Evangelists. Leather. Price, $5. Pp. 213. Philadelphia. Lefax, Incorporated, 1924.

The compiler of this work has abstracted and systematized all the material of pathologic interest from the larger books on obstetrics. As a result, a bulky and verbose volume of possibly 1,300 pages assumes its actual importance as a book of 200 pages, 7 by 4 inches. Since the writer disclaims any originality in the composition, it is difficult to apportion the blame for various statements that are open to question. It must be, however, that the writer is himself responsible for the advertisements of several drug houses and proprietary remedies, as well as for the recommendations of specific instruments for standardized operations. For example, the book advocates a certain brand of forceps for packing the uterus, when this simple procedure is easily and competently accomplished with ordinary dressing forceps. If any initiative had been possible, it would seem that the compiler would hesitate to promulgate as a law that a blood pressure of 150 mm. or over is a positive indication for emptying the uterus in toxemias. It is not only bad teaching but bad obstetrics. It is rather disturbing also to find in a scientific manual the statement that, while the reports of the Stroganoff treatment in eclampsia are good, the method is never to be recommended because it is illogical. To be sure, the writer qualifies the dictum by interjecting, "If emptying the uterus is possible"; but the harm is done. The mind of the student is aroused to look on subsequent generalizations with suspicion. The important subject of intra-uterine measurement of the child is passed over through inadvertence or lack of information with the broad assertion that the process is difficult and inaccurate, whereas, according to the men who are using these procedures as a routine, the process is not only easy but extremely reliable. The Perret maneuver is quoted briefly from some old textbook without any reference to the important modern modifications of Stone, Reed and O'Keefe, which have standardized the method as to both facility and reliability. In this connection we note the compiler's recommendation to wait for the inception of labor before undertaking the cesarean operation (which is spelled incorrectly throughout the book with an i). If the writer or his sources were at all familiar with the measurements of Ahlfeld and McDonald, the surgeon could easily free himself from the humiliation of awaiting instructions from the unintelligent uterus. These maneuvers should not be disregarded by any one who presumes to do the elective cesarean operation. It would be interesting to learn whether the writer's predications in regard to pituitary solution are based on the literature, on his source volumes or on his own experience. He declares that rupture of the uterus *frequently* follows the use of this drug when the proper conditions and dosage are not observed. The employment of pituitary solution has trebled in the last five years, and while there is little doubt that much or even most of it has been given imprudently, it is questionable whether the literature shows a corresponding increase in ruptures. Other points might be mentioned, but enough has been given to indicate the need for a more careful editing. On the whole, the book is a well compacted summary of our obstetric doctrine as it stands today. It shows eloquently the utter futility of the huge, padded and author-exploiting textbooks which the student is compelled to buy and laboriously sift for the nuggets of wisdom.

Miscellany

BARBITAL (VERONAL*) AND BARBITAL COMPOUNDS

"The enterprise of the organic chemist has supplied the medical profession during the last fifty years with a whole armory of new synthetic drugs, many of which are of the highest value," says a recent editorial in the *British Medical Journal* (**1**:128 [Jan. 17] 1925); "but this rapid advance has introduced its own special problems. The general tendency is to produce drugs of ever-increasing potency, and the more potent a drug is for good, the more dangerous it is when misused.

"The potent galenicals in general use consist of a limited number of old-established drugs, and the medical profession is well acquainted with their advantages and disadvantages. There is, however, no limit to the possible number of synthetic drugs, and, in point of fact, new remedies appear every month. The drug houses owning the proprietary rights can be trusted to spread a knowledge of the advantages of any new synthetic remedy, but unfortunately there is no equally efficient method of spreading the knowledge of its disadvantages, and in actual practice it may take years for the medical profession to get adequate knowledge of the possible dangers of any new drug. The evils of this state of affairs are well illustrated by the case of the veronal group of hypnotics.

"Veronal was discovered in 1902, and was soon found to be more potent as a hypnotic than any drug previously synthesized. It also, in no long time, became evident that it was a highly dangerous drug when taken in large doses. It is true that recovery has occurred after a single dose of 100 grains, but, on the other hand, death has followed doses as low as 15 grains. Reports in the medical press and from the coroners' courts have acquainted the medical profession with the possible dangers of veronal, but unfortunately the value of this knowledge is lessened by the fact that a crowd of veronal derivatives have been put on the market under names that fail to suggest any connection with the original and best known drug. Veronal is di-ethyl barbituric acid, and has received the pharmacopeial name of barbitone, but it is also sold under the names malonal and hypnogen. Barbituric compounds or derivatives are sold under the following names: medinal, proponal, luminal, dial, valisan, allonal, chineonal and somnacetin. There may be others of which we have not yet heard. Speaking quite generally, the veronal derivatives are, on the whole, more powerful, and therefore more potentially dangerous, than veronal itself; but the confused nomenclature makes it very possible that a doctor who has found veronal unsatisfactory may turn to an alternative drug, and only learn by bitter experience that it is practically the same thing under a new name.

"We cannot see that any public interest is served by a system which allows a potent drug to be sold and advertised to the medical profession under a dozen different names. The procedure with each new veronal derivative is nearly always the same: The drug is given a fancy name, often no mention is made of its relation to veronal and it is stated to be a potent hypnotic, harmless even in overdoses and incapable of habit formation. These statements are broadcast to the medical profession, and it takes years to get the real truth established; by that time perhaps a dozen new drugs have appeared. In particular, the commonly made statement that some brand-new hypnotic is incapable of habit formation is really an insult to the intelligence of the medical profession, for no safe judgment on this point can possibly be made until a drug has been in fairly widespread use for some years.

"Veronal (barbitone) and the barbituric derivatives are potent drugs, peculiarly dangerous in overdoses, and capable of producing habit; hypnotics, moreover, are a class of drugs with which there is a special liability to indiscriminate self-drugging. We are therefore glad to learn that the Home

* Veronal is the proprietary (trademarked) name under which the drug diethylbarbituric acid was first introduced. It is sold in this country under the name barbital (see New and Nonofficial Remedies, 1924, p. 62).

Secretary is considering the advisability of restricting the sale of this group of drugs to the general public and, as already announced, is consulting the British Medical Association on the subject. Such legislation would have the incidental advantage of making clear to the medical profession which proprietary drugs actually belong to this particular group."

Medicolegal

Entrapment of Physician Under Narcotic Law

(Newman v. United States (U. S.), 299 Fed. R. 128)

The United States Circuit Court of Appeals, Fourth Circuit, in affirming a judgment of conviction of defendant Newman of violating the Harrison Narcotic Law, says that he was a practicing physician, duly registered as required by law. The two counts of the indictment on which he was convicted charged that he knowingly and feloniously gave, distributed, dispensed and furnished on May 7, 1922, and June 6, 1922, to one John Walter McDonald, a narcotic inspector, 16 one-fourth grain morphin tablets and 6 grains of morphin, on the respective dates, not in the course of his regular professional practice as such physician, and not in the treatment of any disease from which McDonald was suffering, and not pursuant to a written order therefor issued for the purpose by the commissioner of internal revenue. The first error assigned was the refusal of the trial judge to direct a verdict of not guilty on the ground of entrapment of the defendant by the government agent. There was a sharp conflict between the testimony of the government narcotic inspector and that of the defendant on the vital issues of fact involved; and there was no testimony by other witnesses, either on behalf of the government or the defense, concerning the transactions between the inspector and the accused. Under this conflicting testimony the court was right in refusing to tell the jury that it should acquit the defendant, because he was entrapped by the officer.

As the issue of entrapment was vital, the defendant was entitled to an accurate statement of the law of entrapment. It is well settled that decoys may be used to entrap criminals, and to present opportunity to one intending or willing to commit crime. But decoys are not permissible to ensnare the innocent and law-abiding into the commission of crime. When the criminal design originates, not with the accused, but is conceived in the mind of the government officers, and the accused is by persuasion, deceitful representation or inducement lured into the commission of a criminal act, the government is estopped by sound public policy from prosecution therefor. The following instruction on the subject of entrapment, given at the request of the defendant's counsel, clearly stated in concrete form the whole law of the subject applicable to the facts of the case:

> The court instructs the jury that, while it is permissible for government agents and officials, through detectives and decoys, to entrap criminals, or to present opportunity to those having intent to or who are willing to commit crime, it is not proper for government officials, agents or decoys to incite to or create crime, for the purpose of prosecuting it or punishing it, and if the jury believe from the evidence that the government's agent and witness, John Walter McDonald, through false statements made to the defendant to the effect that he was suffering from a disorder of the stomach and required morphin for the purpose of relieving the pain incident thereto, or that he was an addict or had been an addict, and found it necessary occasionally to take small doses in an attempt to cure himself from the drug habit, and through such statements, which were false, procured from the defendant the morphin for the dispensing of which the defendant stands indicted, and the defendant, believing the statements made by McDonald were true, was induced thus to violate the law, and that said defendant was not theretofore willing thus to violate the law, and would not otherwise have violated the law, then the jury should find the defendant not guilty.

Another instruction was right: that a physician cannot justify giving or selling morphin to an addict to gratify his desire for the drug, on the claim that it was given in the course of the physician's professional practice.

It appeared that the defendant had suffered imprisonment of approximately eighteen months in jail and the federal penitentiary, the greater part in the penitentiary, while his cases had been pending in the district court and in this court. A strong and persuasive appeal was made to this court that further punishment for the crime for which he was convicted would be a great hardship. While this court was strongly impressed with this view, punishment within the limits of the statute is in the discretion of the trial judge, and this court can give no relief on this ground.

Prospective Medical Expenses of Injured Child

(Clarke v. Eighth Ave. R. Co. (N. Y.), 144 N. E. R. 516)

The Court of Appeals of New York says that the plaintiff's son, when between 8 and 9 years of age, was struck by one of the defendant's cars, necessitating the amputation of his legs below the knees. The plaintiff as guardian ad litem of his son recovered a judgment for $42,500 damages. After that was paid, the plaintiff obtained from the surrogate's court an order permitting him to take from this sum, and pay to himself personally, $1,088, the amount theretofore paid by him for his son's benefit. Besides that action, the plaintiff brought this one, to recover for the loss of services of his son, expenses incurred for care, medical treatment, and the furnishing and keeping in repair of artificial limbs. The case was submitted to the jury with instructions that, in addition to the value of the lost services, it could include in its verdict the cost of the medical treatment that would with reasonable certainty be required prior to the time that the son became 21 years of age; also, the amount during that time of the increased expense for care and maintenance which would be required, as well as the cost of replacing and keeping in repair the artificial limbs, evidence being admitted that for such items the plaintiff had, prior to the trial, expended $1,088. The plaintiff obtained a judgment for $15,000.

In reversing the latter judgment, and granting the defendant a new trial, the court goes on to say that the plaintiff was entitled to recover—the injuries and negligence being conceded—an amount which the jury might fairly say from the evidence was sufficient to compensate him for the prospective loss of services of the infant during his minority, less what it would have cost to support and maintain him during that time had he not been injured. He was also entitled to recover—unless otherwise paid—the expenses actually and necessarily paid out or incurred by him for medical treatment and increased care and maintenance prior to the trial. The court does not think, however, that he was entitled to recover, during the infant's minority, the estimated cost of prospective medical treatment, or the estimated cost of the increased care and maintenance subsequent to the trial. These were items of damage which personally belonged to the infant, and had to be recovered, if at all, and probably were taken into consideration by the jury, in the action brought for his benefit. The infant, and not the father, was entitled to a recovery for these items. This seems much the better rule for the infant in an action of this character. It insures that whatever sum is recovered will be more likely to be used for the infant's benfiet than if a recovery be permitted by the parent. Obviously, both cannot recover. If the infant recover, then, usually, security has to be given to insure the proper use and disposition of the sum awarded. On the other hand, if the parent be permitted to recover, then the recovery becomes his property. He can do with it as he sees fit. He can will it away, or if he dies without a will, it becomes part of his estate. In either case, the infant might receive little or no benefit from it. The natural instinct of a parent to support properly his infant children does not always prevail.

Society Proceedings

COMING MEETINGS

Central Section of the American Roentgen Ray Society, Detroit, Feb. 19-21. Dr. B. R. Kirklin, Western Reserve Life Bldg., Muncie, Ind., President.

Middle Section of American Laryngological, Rhinological and Otological Society, Lafayette, Ind., Feb. 23. Dr. George F. Keiper, 14 North 6th Street, Lafayette, Ind., Chairman.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Gynecology, St. Louis

8: 685-832 (Dec.) 1924

*Carbohydrate Metabolism During Pregnancy and Value of Insulin to Obstetricians. H. Ehrenfest, St. Louis.—p. 685.
Morphologic Study of Some Phases in Development of Sex Glands of Domestic Pigs. K. M. Wilson, Baltimore.—p. 710.
Results Obtained in a Conservative Teaching Clinic Among 2,500 Negro Patients. J. R. McCord, Atlanta, Ga.—p. 723.
*Origin of Uterine Bleeding in Tubal Pregnancy. J. O. Polak and S. A. Wolfe, Brooklyn.—p. 730.
Contracted Pelvis. H. C. Burgess, Montreal.—p. 739.
*Cause and Prevention of Postoperative Gas Pains. C. D. O'Keefe, St. Louis.—p. 748.
Causation and Treatment of Rupture of Uterus. B. C. Hirst, Philadelphia.—p. 757.
*Rare Congenital Anomaly. H. A. Peck, Albany, N. Y.—p. 761.
*Acute Hydramnios and Homologous Triplets. L. M. Randall, Rochester, Minn.—p. 766.
Diagnosis of Early Pregnancy by Roentgenography. R. Peterson, Ann Arbor, Mich.—p. 770.

Carbohydrate Metabolism in Pregnancy.—The artificial glycosuria, often seen very early in pregnancy, and for this reason employed as an aid in diagnosis, Ehrenfest says, in itself is neither a renal diabetes nor an alimentary glycosuria in the usual clinical meaning of these terms. Diabetes is a disease dependent on insufficiency of endocrine pancreatic activity. In women, in whom pancreatic function before impregnation is only barely sufficient or already slightly deficient, the necessity of increased carbohydrate intake, toxic conditions and alterations in endocrine function, during pregnancy may lead to a true diabetes mellitus. It seems probable that insulin will practically eliminate all the many known grave dangers to mother and child arising through a complication of pregnancy with diabetes.

Origin of Uterine Bleeding in Tubal Pregnancy.—Polak and Wolfe assert that vaginal bleeding in the early phase of ectopic pregnancy is the result of the death of the ovum. The bleeding proceeds in this instance from the endometrium as a result of the separation of the decidual cast, and, because of the erratic distribution of the decidual reaction in many cases, persists for days after the ovum dies or is removed.

Prevention of Postoperative Gas Pains.—Summarizing his views, O'Keefe states that regular diet may be given to within twelve hours of the operation. Purgation is not only unnecessary but harmful. Avoidable trauma to the abdominal contents during operation is too often the cause of postoperative gas pains. The ether effect may be alleviated by the preoperative use of morphin and scopolamin hydrobromid and the postanesthetic gastric lavage. Peristaltic action should be stimulated immediately following operation; intermittent injections of saline or water being the method of choice. The use of drugs should be discouraged. Postoperative nutrient rectal feeding predisposes to gas pains. O'Keefe says that the disadvantages of the rectal drip proctoclysis outstrip the advantages. Morphin should not be denied whenever the patient's discomfort demands it. Pain, restlessness, sleeplessness and fear play an important part in the stasis of the gastro-intestinal tract.

Rare Anomaly.—In the case cited by Peck there was association of hydrocephalus, spina bifida and talipes in the same fetus.

Acute Hydramnios and Triplets.—A case is reported by Randall of an homologous triplet pregnancy complicated by acute hydramnios which developed early in the gestation. No satisfactory explanation could be found for the rapid development of the excessive amount of fluid. Very careful scrutiny of the babes and placenta failed to reveal a pathologic condition. The mother was normal aside from having a questionable Pott's disease. Her puerperium was excellent and she is now in very good health.

American Journal of Public Health, New York

14: 1011-1094 (Dec.) 1924

Public Health and Taxes. L. L. Lumsden, Washington, D. C.—p. 1011.
Evolution and Preventive Medicine. M. P. Ravenel, Columbia, Mo.—p. 1016.
Aerobic Spore Forming Lactose Fermenting Organisms and Their Significance in Water Analysis. J. F. Norton and J. J. Weight, Chicago.—p. 1019.
Scarlet Fever. G. F. Dick and G. H. Dick, Chicago.—p. 1022.
Ripe Olive Survey of 1924. C. Thom, H. C. Colson and L. H. James, Washington, D. C.—p. 1029.
What the Engineer Can and Should Do Toward Prevention of Malaria and Mosquito Nuisances. J. A. Le Prince, Memphis.—p. 1035.
Direct Unit Phenol Coefficient. J. R. Conover and J. L. Laird, Philadelphia.—p. 1043.
*Diphtheria Toxoid as an Immunizing Agent. W. H. Park, E. J. Banzhaf, A. Zingher and M. C. Schroder, New York City.—p. 1047.
Preventive Medicine in Industry. G. L. Kiefer, Detroit.—p. 1050.

Diphtheria Toxoid as Immunizing Agent.—Park and his associates assert that at the present time toxoid preparations have been developed which are nearly, if not quite, equal to the best toxin-antitoxin preparations. The toxoid preparations which have no toxicity in guinea-pigs cannot be used in human beings in doses larger than 0.5 c.c. because of the marked pseudoreactions. Toxoid that is slightly toxic can be diluted at least ten times and so reduce the amount of proteins. It is a question whether the slightly toxic diluted toxoid preparations are as stable as the nontoxic ones. Intensive experimental work should be done in both toxoid and toxin-antitoxin preparations so as constantly to have thoroughly potent and stable preparations.

Annals of Surgery, Philadelphia

80: 801-969 (Dec.) 1924

*Arteriovenous Aneurysm. E. Holman, Cleveland.—p. 801.
Bone Tumors: Myxoma; Three Cases. J. C. Bloodgood, Baltimore.—p. 817.
*Congenital Tumors of Coccygeal Region. E. J. Bateman, Pittsburgh.—p. 834.
Melanoma of Nail Bed: Three Cases. T. B. Jones, Boston.—p. 839.
*Fractures of Shaft of Femur. W. D. Andrus, Cincinnati.—p. 848.
Astragalectomy (Whitman Operation) in Paralytic Deformities of Foot. W. R. MacAusland and A. R. MacAusland, Boston.—p. 861.
*Radium in Treatment of Prostatic Carcinoma. B. S. Barringer, New York.—p. 881.
Indications for Operation in Treatment of Tuberculous Cervical Lymph Glands. J. M. Hanford, New York.—p. 885.
Rupture of Diaphragm. A. R. Koontz, Baltimore.—p. 898.
*Extraperitoneal Intrapleural Route of Approach for Intrathoracic Surgery. M. Joannides, Minneapolis.—p. 908.
*Acute Appendicitis in Infant. F. Beekman, New York.—p. 911.
*Clinical Significance of Relation of Total and Differential Leukocyte Counts in Acute Appendicitis. W. C. Menninger and H. S. Heim, New York.—p. 915.
Late Recurrence After Radical Operation for Carcinoma of Breast. G. Woolsey, New York.—p. 932.
*Improved Technic for Intestinal Anastomosis. C. A. Roeder, Omaha.—p. 939.

Arteriovenous Aneurysm.—Clinically, Holman has found that changes following the introduction of an arteriovenous fistula are dependent primarily on the size of the fistula and on an unobstructed return flow to the heart. Small fistulas, however long they may have existed, do not cause changes in either vessels or heart. Slightly larger fistulas may result in an enlargement of the proximal vein, but no visible change in the heart or proximal artery. Large fistulas are inevitably accompanied by changes in both artery and vein and usually by a demonstrable enlargement of the heart. The extent of these changes is intimately dependent on the size of the fistula. These clinical observations are identical with those found in the experimental laboratory and are undoubtedly dependent entirely on the amount of blood which finds its way through the fistula back to the heart.

Congenital Tumors of Coccygeal Region.—Microscopic examination of the contents of the sac removed by Bateman disclosed flattened simple epithelium and stratified columnar epithelium, showing that the tumor was derived from the vestiges coccygiens.

Fractures of Shaft of Femur.—Forty fractures of the shaft of the femur (thirty-three simple and seven compound), are reported by Andrus. Treatment in the majority of

cases consisted in primary immobilization in a Thomas splint with closed reduction and application of a plaster spica later. Several patients were treated entirely by means of the Thomas splint. There were twelve open reductions with two infections (16.6 per cent.). The average hospitalization time was fifty-eight days for the simple and 149 days for the compound fractures. The average shortening was 1.8 cm. in the simple cases and 2.3 cm. in the compound cases. Three cases were discharged before union was complete; the remainder had firm union at the time of discharge. Nine cases were discharged with no active motion in the knee; thirteen with 30 degrees of mobility, five with 60 degrees, and two with full motion. An early attempt at reduction and immobilization influences markedly the hospitalization time and the end results in fractures of this type.

Radium Treatment of Carcinoma of Prostate.—The best method of treatment of carcinoma of the prostate in Barringer's hands has been by radium needles inserted into the prostate and seminal vesicles, this repeated every two to three months until sclerosis of the carcinoma occurs. If there is urethral invasion, urethral treatment is added to the needle treatment.

Extraperitoneal Intrapleural Approach to Thorax.—The route described by Joannides preserves the rigidity of the chest wall and at the same time makes the various intrathoracic organs quite accessible, particularly those in the lower thorax. With the aid of artificial respiration, the pleural cavity may be left open over prolonged periods, and thus various types of operations may be performed without the necessity of unnecessary haste which very frequently proves detrimental to the patient. A high rectus incision is made and the fascia of the external and internal oblique muscles is incised at the point of the junction to the fascia of the rectus muscle. The muscles are then retracted and the costal attachments of the transversus abdominis are exposed by means of blunt dissection. The transversus abdominis muscle and the diaphragm are divided as close to the costal margin as possible. Artificial respiration is now started and is continued until the chest cavity is completely closed.

Acute Appendicitis in Infant.—Beekman asserts that the relatively high death rate in acute appendicitis in infancy is due to the higher percentage of rapid perforations followed by spreading peritonitis. The younger the infant the greater is the chance of its developing spreading peritonitis and the less chance has its peritoneum of localizing infection. Cathartics undoubtedly precipitate perforation in many cases.

Leukocyte Count in Appendicitis.—Menninger and Heim support the principles that the total leukocyte count is a measure of body resistance against an inflammatory process up to a certain degree of leukocytosis; that the percentage of polymorphonuclears is an index of the severity of the inflammatory process; and that the greatest aid to be obtained from a preoperative blood count as to indication for operation is the relationship of these two.

Improved Technic for Intestinal Anastomosis.—In the method described by Roeder the intestine is crushed with a broad Payr clamp, fully one-half inch wide, on an angle of about 50 degrees. Thin-bladed Bainbridge retention clamps facilitate later steps. The cautery should not be used to excise the mesentery from the intestine. The retention clamps then are brought together and the linen mattress approximating suture is passed through both segments, exactly where the crushed tissue joins the normal intestine. The suture, however, is held taut as it is passed, and the clamps are held closely together during the operation. The distal portion of the linen approximating suture, having become contaminated, is swabbed with pure phenol, and the cuff of crushed tissue is reduced with a cautery to a width of one-eighth inch. The temporary linen approximating suture is held taut between forceps, and the anastomosing suture, of silk or No. 00 chromic, is started on the side opposite to the approximated crushed edges. The anastomosing suture, having completed one side, is continued in order to cover over the one-eighth inch cuff of crushed tissue on the opposite side. Following this step the opening in the mesentery is carefully closed in two layers in order to cover all raw surfaces. After the union has been completed with one layer of silk or catgut, the proximal portion of the linen approximating suture is cut close to the intestine and pulled through. The anastomosis is then opened by inverting the adjacent intestinal walls through it.

Arkansas Medical Society Journal, Little Rock

21: 133-151 (Dec.) 1924

Traumatism of Kidney. W. R. Klingensmith, Fort Smith.—p. 133.
Malignant Neoplasms of Bones. W. F. Smith, Little Rock.—p. 135.
Use of Roentgen-Rays in Treatment of Pertussis. M. Smith and A. C. Kirby, Little Rock.—p. 143.

Canadian Medical Association Journal, Toronto

14: 1149-1262 (Dec.) 1924

Neglected Side of Medicine. G. S. Fahrni, Winnipeg.—p. 1149.
Anatomic Types and Their Relationship to Disease. I. M. Thompson, Montreal.—p. 1155.
Compound Fractures. G. E. Wilson, Toronto.—p. 1164.
Primary Ulcerative Colitis. P. H. T. Thorlakson, Winnipeg.—p. 1168.
*Cerebral Hemorrhage in New-Born. L. P. MacHaffie, Ottawa.—p. 1173.
*Erysipelas Successfully Cured by Subcutaneous Injection of Cow's Milk. T. A. Lebbetter, Yarmouth, N. S.—p. 1179.
Destruction and Removal of Accessible Neoplastic Diseases by Endothermy. G. A. Wyeth, New York.—p. 1183.
Treatment of Chronic Peptic Ulcer. J. D. McEachern, Winnipeg.—p. 1187.
Chronic Myocarditis. A. H. MacCordick, Montreal.—p. 1190.
Chronic Infective Arthritis. A. M. Forbes, Montreal.—p. 1192.
Industrial Ocular Injuries. D. M. Campbell and J. M. Carter, Detroit.—p. 1195.
How to Prepare and Deliver Paper to Medical Society. E. S. Moorhead, Winnipeg.—p. 1202.
Case of Tertian Malarial Fever Following Operation for Appendicitis. S. H. Corrigan, Lampman, Sask.—p. 1204.
Case of Papilloma of Sigmoid. W. J. Cochrane, Montreal.—p. 1206.
Picric Acid Poisoning. W. Bapty, Victoria, B. C.—p. 1207.
Case of Ringworm in Adult Due to Trichophyton Gypseum. J. F. Burgess, Montreal.—p. 1209.
Tuberculosis of Peritoneal and Pleural Sacs Treated by Alpine Lamp. C. A. Peters, Montreal.—p. 1210.
Recent Work on Capillaries. H. E. MacDermot, Montreal.—p. 1212.

Cerebral Hemorrhage in New-Born.—MacHaffie suggests that probably many of the screaming babies which are supposed to have intestinal colic and in whom one finds great difficulty in establishing a gain in weight are essentially cases of cerebral hemorrhage. He says that any one doing an average obstetric practice will have from two to three cerebral hemorrhage cases annually, in at least 50 per cent. of which the babies would develop normally, provided they received proper treatment early.

Injection of Cow's Milk in Treatment of Erysipelas.—Foreign protein (cow's milk) has proved in Lebbetter's experience to be a rapid, economical and positive factor in the immediate cure of erysipelas. Out of twelve cases treated, eleven of which had been seen early before the fifth to the seventh day of the disease, four had the temperature reduced to normal and all other symptoms arrested within twenty-four hours of the first injection; four had similar reaction within forty-eight hours of the first injection; and three within seventy-two hours. The procedure followed for the preparation and administration of foreign protein was as follows: The required amount of fresh whole milk, secured from a government tested herd, was placed in a sterilized container and then in a water bath. The water was boiled for ten minutes, then the milk container was shaken well and the milk administered either subcutaneously or intramuscularly at regular body temperature. The selection of a subcutaneous or an intramuscular route depends on the severity of the infection and the general condition of the patient. The usual dose is from 3 to 5 c.c. This dosage may be repeated, if deemed necessary, for four or five consecutive days.

Johns Hopkins Hospital Bulletin, Baltimore

35: 386-424 (Dec.) 1924

*Experimental Study of Anastomotic Circulation in Dog. F. L. Reichert, Baltimore.—p. 385.
Pernicious Anemia and Renal Insufficiency. R. H. Major, Kansas City, Kan.—p. 390.
*Statistical Study of 888 Cases of Biliary Tract Disease. A. Blalock, Baltimore.—p. 391.
*Effect of Intravenous Injection of Mercurochrome on Kidneys. J. H. Hill and C. Y. Bidgood, Baltimore.—p. 409.

Timing Device for Determination of Refractory Period of Heart. F. R. Dieuaide and R. H. Turner, Baltimore.—p. 411.
*Use of Plaster in Treatment of Fractured Femurs. W. M. Firor, Baltimore.—p. 412.
*Formation of Bile Pigment from Hemoglobin in Tissue Cultures. A. R. Rich, Baltimore.—p. 415.
Isolation of Adenine Nucleotide from Blood. W. S. Hoffman, Baltimore.—p. 417.

Anastomotic Circulation.—The changes which occur in the large arteries at the site of ligation are described by Reichert. An effort was made to define the collateral channels which develop after ligation of the main arterial trunks in the dog. It is shown that after division of the abdominal aorta, these collateral channels are not vasa vasorum, but are probably newly formed vessels.

Biliary Tract Disease.—The facts presented by Blalock would seem to justify the belief that the gallbladder should be removed in all cases in which it is diseased, whether stones are or are not present, except in cases with malignancy of the biliary tract, provided that the condition of the patient is such that the added time under anesthesia will not lessen too greatly his chances for recovery. In malignancy of the gallbladder, when a positive diagnosis can be made without exploration, no operation should be performed, inasmuch as it only shortens the patient's life.

Effect of Mercurochrome on Kidneys.—Hill and Bidgood injected rabbits intravenously with varying doses of mercurochrome and noted the effect on the kidneys. A mild reaction occurred in the kidney which is directly proportional to the dose given. There was no actual destruction of tubular epithelium from doses as high as 7.5 mg. per kilogram of body weight, but with 10 mg. per kilogram there is a definite renal damage, so that it would be unwise to use so large a dose clinically. Repeated injections do not cause any added damage, and can be given, as in these animals, as often as twice a week with safety, provided a dose of 5 mg. per kilogram of body weight be not exceeded. The slight damage is not irreparable and at the end of two months the kidneys show no evidence of any previous lesion.

Use of Plaster of Paris in Treatment of Fracture.—The records of all the patients treated in the Johns Hopkins Hospital for recent fractures of the shaft of the femur have been reviewed by Firor. There have been five methods of treatment employed for these patients: (1) Buck's extension; (2) overhead extension; (3) open reduction; (4) early immobilization in plaster; (5) immediate immobilization in plaster. The transition from one method to the other is described. The results obtained by the different methods of treatment are compared. The average stay in the hospital of the patients treated by the various methods is tabulated. It appears that immediate immobilization in plaster of fractures of the shaft of the femur does not give satisfactory results in patients over 14 years of age, whereas in patients between 7 and 14 years the method gives good results, and in children under 7 years, this method gives results which are as good as those obtained by overhead traction. By the use of a method described as early immobilization in plaster, the period of residence in the hospital was greatly reduced.

Formation of Bile Pigment from Hemoglobin.—Rich's observations are contrary to the belief that hematoidin is never formed from phagocytized hemoglobin, and they support the view that the phagocytic reticulo-endothelial cells may be concerned in the transformation of hemoglobin into bile pigment. Whether the phagocytic cells liberate a ferment which is able to bring about this transformation extracellularly is not yet certain.

Journal of Cancer Research, New York

8: 443-548 (Dec.) 1924

Reactions of Tissues of Rat's Liver to Larvae of Tenia Crassicollis and Histogenesis of Cysticercus Sarcoma. F. D. Bullock and M. R. Curtis, New York.—p. 446.
*Special Form of Chondroma of Lung. C. B. McGlumphy, Chicago.—p. 482.
*Inorganic Constituents of Serum in Cancer. R. C. Theis and S. R. Benedict, New York.—p. 499.
*Results of Radiation Therapy in Leukemia and Lymphogranuloma. B. F. Schreiner and W. L. Mattick, Buffalo.—p. 504.

Chondroma of Lung.—The type of tumor described by McGlumphy was characterized by the presence of epithelial in addition to cartilaginous elements. The name adenochondroma is suggested. One detail of structure deserves special mention, i. e., the presence of fat tissue, showing that fat may develop from the small amount which is sometimes present in the submucosa of the large bronchi.

Inorganic Constituents of Blood Serum in Cancer.—The findings of Theis and Benedict agree with those of Goldzieher that calcium is low in cancer blood and with Mottram that sodium is normal. Potassium is somewhat decreased in a large proportion of cases. The more advanced cases have lower average figures than the nonmalignant cases. The sodium chlorid content of cancer blood is normal.

Radiotherapy of Leukemia and Lymphogranuloma.—The results of radiation therapy are reported by Schreiner and Mattick in twenty-five cases of leukemia and forty-six cases of lymphogranuloma. No cures by this form of therapy are reported, but marvelous amelioration of symptoms and remissions have resulted which, however, were not permanent.

Journal of Industrial Hygiene, Boston

6: 307-362 (Dec.) 1924

Hygienic Significance of Nickel. K. R. Drinker, L. T. Fairhall, G. B. Ray and C. K. Drinker, Boston.—p. 307.

Journal of Laboratory and Clinical Medicine, St. Louis

10: 173-258 (Dec.) 1924

Undergraduate Teaching of Clinical Pathology. F. B. Johnson, Charleston, S. C.—p. 173.
*Cervical Sympathectomy in Angina Pectoris. W. H. Holmes and S. W. Ranson, Chicago.—p. 183.
*Alleged Synergism of Magnesium Sulphate and Morphin When Injected Prior to Induction of Anesthesia by Ether-Oil Colonic Method. H. Beckman, Milwaukee.—p. 189.
*Chemical Blood Analyses in Asthma, Hay-Fever and Allied Conditions. M. A. Ramirez, A. V. St. George and R. L. Moses, New York.—p. 199.
Heparin in Blood Transfusion. E. C. Mason, Detroit.—p. 203.
Use of Defibrinated Blood Preserved with Formaldehyd to Control Dilutions of Dried Blood. R. Gilbert and E. A. Parsons, Albany, N. Y.—p. 206.
Histopathologic and Blood Studies with Silver-Arsphenamin. C. W. Hooper and C. N. Myers, New York.—p. 208.
Effect of High Concentrations of Alkali on Color of Phenolsulphonephthalein. R. S. Hubbard and D. O. Meeker, Clifton Springs, N. Y.—p. 229.
*Determination of Urea and Sugar in Blood. B. Gruskin, Chicago.—p. 223.
Modification of Kramer-Tisdall Method for Determination of Sodium in Blood Serum. R. L. Haden, Kansas City, Kan.—p. 236.
*Use of Brilliant Green Bile for Collection and Study of Typhoid Stools. L. C. Havens and S. A. Dehler, Montgomery, Ala.—p. 238.
Use of Autogenous Vaccines in Pulmonary Diseases: Cohen-Heist Method of Preparation. J. H. Clark, Philadelphia.—p. 243.
Use of Acetylene Gas for Hemoglobin Estimation. H. R. Miller, New York.—p. 248.
Use of Ultraviolet Rays for Polychromization of Methylene Blue. S. U. Marie and J. T. Raleigh, Boston.—p. 250.

Cervical Sympathectomy for Angina Pectoris.—In the case cited by Holmes and Ranson the paroxysmal pain of angina pectoris was relieved by the removal of the superior sympathetic ganglion. At no time following the operation did the patient experience pain either in the thorax or in the left arm.

Synergism of Magnesium Sulphate and Morphin.—Experimental evidence is given by Beckman that 1 ounce of a mixture of 75 per cent. ether and 25 per cent. olive oil per 20 pounds body weight, introduced into the colon of dogs one hour after the subcutaneous injection of 0.25 c.c. of a 4 per cent. solution of morphin sulphate per kilogram body weight is effective in inducing safe and very satisfactory surgical anesthesia and in maintaining same for a little more than one hour. One ounce of a mixture of 75 per cent. ether and 25 per cent. olive oil per 40 pounds body weight, introduced into the colon of dogs one hour after the subcutaneous injection of 0.25 c.c. of a 50 per cent. solution of magnesium sulphate, is not effective in inducing satisfactory surgical anesthesia. The subcutaneous injection of 2 c.c. of a 50 per cent. solution of magnesium sulphate at the same time that 0.25 c.c. of a 4 per cent. morphin sulphate solution per kilogram body weight is injected in dogs, when these injections are followed after one hour by the introduction into the colon of 1 ounce of a mixture of 75 per cent. ether and 25 per cent.

olive oil per 40 pounds body weight, gives rise to undesirable respiratory symptoms and a general depression, which usually lasts two days. These symptoms are directly referable to the magnesium sulphate, because they do not arise when the salt is omitted, other conditions being the same.

Blood Chemistry in Asthma and Hay-Fever.—Nonprotein nitrogen, sugar and plasma chlorids were determined by Ramirez, St. George and Moses in forty cases of asthma, hay-fever and allied conditions. Determinations were made before instituting treatment and after completion of the same. The resulting figures suggest that in asthma, urticaria, hay-fever, etc., there is a relative high plasma chlorid content of the blood and to a less extent in the sugar and nonprotein nitrogen; the latter two especially in the nonallergic type of asthma cases with a long standing associated bronchitis. It is impossible to state definitely that treatment caused a marked change in the chemical constituents of the blood, though a glance at the tables shows some diminution in the constituents after treatment.

Determination of Urea and Sugar in Blood.—The method described by Gruskin, briefly, is as follows: Oxalated blood is incubated with specially prepared urease solution. After incubation, a protein-free filtrate is prepared. One portion of the filtrate is used for the determination of sugar by the usual Folin-Wu technic, and another portion is nesslerized directly for the urea nitrogen. It is necessary to prepare the urease under closely specified conditions so that a minimum amount of bean substance is extracted along with the urease. Foreign bean substance consists of reducing sugars which raise the sugar value and materials which interfere to a greater or lesser extent with nesslerization. In no case will the blood sugar be found to be high by more than 5 or 6 mg. as compared with the regular Folin-Wu method. This is a correction which may be applied if desired, but in the opinion of the author it represents an error which may well be tolerated in routine blood chemistry work, since blood sugar results are reported, as a rule, to two significant figures only.

Use of Brilliant Green to Study Typhoid Bacillus.—A solution of brilliant green in bile will inhibit *B. coli* and yet allow *B. typhosus* to multiply. This principle has been utilized successfully by Havens and Dehler in the culture of feces for typhoid. It overcomes the loss of dependability resulting from delayed examination and permits recovery of the typhoid bacillus from the specimen even after several days.

Journal of Parasitology, Urbana, Ill.

11: 59-122 (Dec.) 1924

Genus Haplozoon, Dogiel. Life History and Systematic Position. W. Shumway, Urbana.—p. 59.
Giardia and Chilomastix from Monkeys, Giardia from Wild Cat and Balantidium from Sheep. R. W. Hegner, Baltimore.—p. 75.
Mosquito Breeding in Specific Places. W. Rudolfs.—p. 79.
Microsporidia Parasitic in Mosquitoes. VI. Development of Thelchania Opacita, a Culicine Parasite. R. Kudo, Urbana.—p. 84.
Ancylostoma Braziliense as Human Parasite in Philippines. C. Manalang, Manila, P. I.—p. 90.

Journal of Urology, Baltimore

12: 585-694 (Dec.) 1924

*Development and Clinical Application of Synthetic Compound Possessing Experimental Requirements of Ideal Internal Urinary Antiseptic. V. Leonard, Baltimore.—p. 585.
Clinical Aspects of Horseshoe Kidney. N. P. Rathbun, Brooklyn.—p. 611.
Surgical Horseshoe Kidney. Case. E. Hess, Erie, Pa.—p. 627.
Solitary Serous Cysts of Kidney. G. F. McKim and P. G. Smith.—p. 635.
Papillary Cyst-Adenoma of Kidney Associated with Papillomatous Growths in Pelvis, Ureter and Bladder. F. S. Patch and L. J. Rhea, Montreal.—p. 671.

Urinary Antiseptic.—A paper on this subject was published in The Journal, Dec. 20, 1924, p. 2005.

Kansas Medical Society Journal, Topeka

24: 347-374 (Dec.) 1924

Anomaly of Placental Separation. W. H. Vogt, St. Louis.—p. 347.
Peptic Ulcer. E. F. Day, Arkansas City, Ark.—p. 351.
Colds. F. M. Wiley, Fredonia.—p. 353.
Amenorrhea in Young Diabetics. H. E. Marchbanks, Pittsburgh.—p. 357.

Kentucky Medical Journal, Bowling Green

22: 511-602 (Dec.) 1924

Problem of Bleeding Uterus. I. Abell, Louisville.—p. 513.
Management of Bottle-Fed Baby. W. O. Eaton, Ashland.—p. 519.
Neuritis: Sequel of Encephalitis. Case. B. C. Frazier, Louisville.—p. 526.
Treatment of Goiter. J. R. Wathen, Louisville.—p. 528.
Surgery of Stomach. J. G. Sherrill, Louisville.—p. 530.
*Unusual Case of Tetanus. J. H. Blackburn, Bowling Green.—p. 535.
Indirect Abdominal Pregnancy; Living Child Delivered by Celiotomy. J. R. Cowan, Danville.—p. 538.
Etiology and Treatment of Diseases of Nasal Accessory Sinuses. J. A. Stucky, Lexington.—p. 542.
Use of Ophthalmometer. B. C. Rose, Bryantsville.—p. 545.
Research; Relation to Medicine. D. J. Healy, Lexington.—p. 547.
Tuberculous Mastoiditis Treated with Actinic Rays. G. F. Doyle, Winchester.—p. 549.
Foci of Infections Above Collar Bone; Importance of Early Recognition. R. W. Bledsoe, Covington.—p. 552.
Treatment of Pneumonia. A. E. Howe, Grants Lick.—p. 557.
Acute Mastoiditis from Standpoint of General Practitioner. S. Watkins, Louisville.—p. 558.
Sarcoma of Choroid. S. G. Dabney, Louisville.—p. 561.
Management of Ruptured Appendix. J. G. Gaither, Hopkinsville.—p. 562.
Birth Injuries to New-Born. J. O. Jenkins, Newport.—p. 566.
Common Lesions in Prostatic Urethra. E. R. Palmer, Louisville.—p. 568.
Bladder Symptoms. C. C. Howard, Glasgow.—p. 572.
Quinidin in Treatment of Permanent Auricular Fibrillation. E. F. Horine, Louisville.—p. 573.
Pyelitis in Infancy. J. W. Bruce, Louisville.—p. 580.
Retinitis Due to Toxemia of Pregnancy. S. G. Dabney, Louisville.—p. 582.
Granuloma Inguinale. W. J. Young, Louisville.—p. 584.
Problem of Medical Cults and Isms and Its Solution. S. J. Rose, Winchester.—p. 587.
Osteochondroma of Phalanx. J. D. Hancock, Louisville.—p. 589.
Industrial Eye Injuries. W. J. Thomasson, Newport.—p. 590.
Epidemiology of Typhoid. C. A. Calvert, Scottsville.—p. 592.
Cataract in Only Eye. C. C. Maupin, Louisville.—p. 595.
Neurofibroma Treated with Radium. W. J. Young, Louisville.—p. 596.

Tetanus Follows Attempt to Abort with Chicken Feather.—Blackburn reports the case of a woman, aged 23, two months pregnant, who used a chicken feather with the idea of bringing on the flow, introducing the soft end of the feather into the uterus. Since the flow did not appear, another feather was used three days afterward, at which time she noted a slight blood stain on the feather and finger and took it for granted that the finger nail had injured the os slightly. Five days later she passed a fetus approximately 2½ to 3 inches in length and the next day a physician was called who removed the placenta and used a vaginal douche of creolin. On the second day after this treatment she complained of pain and ridigity in the muscles of the jaw and stiffness of the back of the neck. The clinical course was a classical picture of an extremely severe case of tetanus. Antitoxin was given, 10,000 units intraspinally and 10,000 intravenously, at 11 a. m. At 8 p. m., she was given 10,000 units in the spinal canal and 20,000 intravenously. On the following five days, she received from 30,000 to 40,000 units each day until a total of 160,000 units was given. In addition to the antitoxin she was given hypodermics and morphin, and a mixture of sodium bromid, 30 gm., with chlorbutanol, 20 gm., by rectum, as necessary. On the eighth day she developed an extremely severe serum rash, with typical urticarial wheals, which subsjded in from three to four days.

Maine Medical Association Journal, Portland

15: 103-128 (Dec.) 1924

Appeal for Closer Cooperation Between General Practitioner, General Surgeon and Urologist. E. S. Merrill, Bangor.—p. 103.
Physical Examination in Pulmonary Tuberculosis. W. C. Jensen, National Sanatorium, Tenn.—p. 110.

Nebraska State Medical Journal, Norfolk

9: 457-494 (Dec.) 1924

Spinal Pressure in Brain Surgery. K. S. J. Hohlen, Lincoln.—p. 457.
Spleen with Reference to Surgical Treatment. C. E. Slagle, Alliance.—p. 462.
Fractional Roentgen-Ray Dosages in Treatment of Carcinoma of Stomach. W. L. Rose, Omaha.—p. 466.
Internist and Life Insurance Examination. M. J. Breuer, Lincoln.—p. 469.
Vivisection. M. G. Wohl, Omaha.—p. 473.
Appendico-Biliary Syndrome. M. Emmert, Omaha.—p. 477.
Falacies of Intraglandular Injection Treatment of Goiter. C. L. Martin, Omaha.—p. 479.
Membranous Enteritis. J. W. King, Hartington.—p. 481.
Syphilis of Lung. M. Grodinsky, Omaha.—p. 483.

Nephrostomy and Drainage of Perinephritic Abscess Under Paravertebral Anesthesia. C. F. Heider, Sutherland.—p. 484.
Granular Degeneration of Cytoplasm of Hepatic Cells. E. E. Boyd, Central City.—p. 485.

New Jersey Medical Society Journal, Orange

21: 375-406 (Dec.) 1924

Food Combinations: Original Scheme of Eating Based on Newer Knowledge of Nutrition and Digestion. N. P. Norman, New York City.—p. 375.
Preoperative, Operative and Postoperative Care of Patients Suffering from Prostatic Hypertrophy. O. W. Lowsley, Baltimore.—p. 388.
Maternal Welfare Program. T. Teimer, Newark.—p. 394.

New York State Journal of Medicine, New York

24: 971-1034 (Dec.) 1924

Nystagmus in Relation to Eye and Ear. C. Berens, New York City.—p. 971.
Clinical Results After Irradiation of Cancer of Cervix Uteri. B. F. Schreiner and L. C. Kress, Buffalo.—p. 981.
Radium as Prophylactic and Curative Agent in Recurrent Carcinoma of Uterus. H. Bailey, New York City.—p. 985.
Gangrene of Middle Turbinate; Sequestration of Nasal Septum. Mucocele of Frontal Sinuses in Case of Diabetes. A. G. Morris, Rochester.—p. 987.
Serum and Vaccine Treatment of Chief Communicable Diseases of Childhood. J. B. Neal, New York City.—p. 989.
Acquired Syphilis of Lungs. C. E. Hamilton, Brooklyn.—p. 993.
What We Need for Better Schools Medical Inspection and Health Service. W. A. Howe, Albany.—p. 996.

Oklahoma State Medical Association Journal, Muskogee

17: 285-310 (Dec.) 1924

Some Phases of Industrial Surgery. F. S. Clinton, Tulsa.—p. 285.
Vomiting of Infancy and Early Childhood. C. V. Rice, Muskogee.—p. 286.
Medical and Surgical Phases of Obstetrics. G. R. Osborn, Tulsa.—p. 289.
Are We Progressing in Obstetrics as in Other Branches? If Not, Why? J. G. Smith, Bartlesville.—p. 291.
Care of Pregnant Woman by General Practitioner. R. M. Anderson, Shawnee.—p. 293.
Case of Abdominal Pregnancy at Term. W. P. Fite, Muskogee.—p. 297.

Philippine Journal of Science, Manila

25: 539-660 (Nov.) 1924

Study of Buprestide, Collected by Charles Fuller Baker in Singapore, Borneo, and Philippine Islands. J. Obenberger.—p. 539.

Public Health Journal, Toronto

15: 541-590 (Dec.) 1924

Health Service Work in Schools in Toronto. W. R. Michell.—p. 541.
Modern Hospital for Treatment of Infectious Diseases. B. E. Parry.—p. 557.
Judgment Given in Case Under Act for Prevention of Venereal Diseases. J. Riddell.—p. 566.

Tennessee State Medical Association Journal, Nashville

17: 247-275 (Dec.) 1924

Borderline Cases. H. A. Royster, Raleigh, N. C.—p. 247.
Advisability of Prostatectomy. T. D. Moore, Memphis.—p. 251.
Cleft Lip and Palate. J. P. Baird, Dyersburg.—p. 257.
Lactic Acid Milk in Infant Feeding. M. S. Lewis, Nashville.—p. 265.
Relation of Endocrine Glands to Growth Disturbances in Children. R. B. Wood, Knoxville.—p. 268.
Adult Scurvy. J. Witherspoon, Nashville.—p. 271.

U. S. Naval Medical Bulletin, Washington, D. C.

21: 751-909 (Dec.) 1924

The District Medical Officer. R. W. Plummer.—p. 751.
Activities in U. S. Naval Hospital, Great Lakes, Ill. G. D. Sutton.—p. 774.
Diarrhea in Bottle-Fed Infants. A. J. Toulon.—p. 780.
Psychoanalyst and His Work. J. C. Thompson.—p. 787.
Anesthesia, Regional and Spinal. H. M. Stenhouse.—p. 797.
Vaccine and Serum Treatment. J. E. Miller.—p. 803.

Virginia Medical Monthly, Richmond

51: 529-594 (Dec.) 1924

Surgical Treatment of Unilateral Tuberculosis. A. J. Ochsner, Chicago.—p. 529.
Goiter. L. D. Keyser, Roanoke.—p. 531.
*Significance of Spleen. H. E. Jordan, University.—p. 537.
Anemia. D. Vanderhoof, Richmond.—p. 544.
Pulmonary Tuberculosis in Children of School Age. C. R. Grandy, Norfolk.—p. 547.
*Carcinoma of Penis. C. P. Howze, University.—p. 550.
Surgery of Female Pelvis. A. M. Showalter, Christiansburg.—p. 553.
*Ideas in Syphilology. T. L. Driscoll, Richmond.—p. 556.
Syphilis; Preventable Infection. D. C. Smith, University.—p. 557.
Neurovascular Syphilis. T. W. Murrell, Richmond.—p. 559.
Radium Therapy in Uterine Hemorrhage. J. M. Emmett, Clifton Forge.—p. 562.
Roentgen-Ray Examination of Urinary Tract. J. T. McKinney, Roanoke.—p. 566.
Therapeusis by Intraperitoneal Injections in Infancy. T. E. Oast, Portsmouth.—p. 570.
Aneurysm. I. Brown, Norfolk.—p. 573.
Outlet and Its Pelvimetry. M. B. Savage, Norfolk.—p. 575.
Typhoid Perforation with Recovery. R. Mason, The Plains.—p. 579.

Significance of Spleen.—The question of the significance of the spleen has been studied by Jordan coincidently from three different directions, namely from the direction of its embryology, its racial history and the effect of its extirpation in lower forms like the frog. His findings tend to show that the spleen is essentially an extensively vascularized mass of lymphocytes supported by a stroma of slightly differentiated mesenchyme, namely, the reticulum, which latter is also the mother tissue of the lymphocytes. The function of the spleen obviously inheres largely, if not exclusively, in the function of the lymphocytes. The presence of other large masses of lymphocytes, as in the lymph nodes and red marrow, presumably renders the spleen unnecessary, since its lymphocyte functions can easily be compensated for by hyperplasia of these other lymphoid areas. The outstanding functions of the lymphocytes are differentiation into erythrocytes, granulocytes and monocytes. The latter are essentially phagocytes. In the spleen, as splenic leukocytes or splenocytes derived, in part, also from reticular and endothelial cells, they digest effete red blood cells. Though the normal function of the spleen appears of little essential consequence, under pathologic conditions, as for example in leukemias and anemias, its disturbed functional activity produces, or at least accompanies, grave morbid conditions. In general, these pathologic conditions represent exaggeration of the normal condition, namely, excessive abundance or activity of the phagocytes, or excessive lymphocyte production with inability of commensurate differentiation, producing blood conditions characterized by the presence of large numbers of immature cells. The pathology of the spleen is very largely explicable in terms of its developmental and evolutionary history. It is apparent that the questions of the significance and the function of the spleen involve very intimately the question of hematopoiesis, and that of the stimuli which effect a lymphocyte differentiation into erythrocytes, granulocytes or monocytes. Both granulocytes and monocytes develop also from reticular cells as well as from lymphocytes, and in part, also from endothelium. The conclusion deduced from embryologic normal histologic and evolutionary data points to an erythrocytogenic capacity of the lymphocyte, and to the significance of the spleen so far as it represents a lymphoid organ.

Carcinoma of Penis.—Howze presents an analysis of seventeen cases of malignant growths of the penis. The most frequent predisposing cause was phimosis, which was noted in 53 per cent. of the cases. The presence of irritating discharge with phimosis should always excite suspicion of cancer in patients past middle age. Circumcision should be performed at an early age as a prophylactic measure. Metastases take place relatively late, the growth remaining localized to the glands or prepuce. The inguinal glands are involved by either infection or carcinoma in a large percentage of cases—94 per cent. in this series. The deep lymphatics of the penis may show involvement without superficial glandular enlargement. The treatment of choice is amputation of the penis with extirpation of the inguinal glands, followed by radiation. Radium and roentgen ray are important adjuncts to surgery in all advanced cases, and may prove to be the method of choice in certain selected cases.

Significance of Wassermann-Fast Blood.—Basing his deductions on the study of 300 syphilitics, Driscoll asserts that a Wassermann-fast blood is in reality a drug-fast condition. The means of preventing this is to limit the amount of any single drug given. In the administration of arsphenamin, a maximum dose should be the initial dose, due consideration being given conditions constituting contraindications. The cerebrospinal system should be looked on at all times as being potentially a focus of infection.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

36: 461-514 (Nov.) 1924

Psoriasis and Seborrheic Eczema. A. Civatte.—p. 461.
*Arsenic Cancer of Occupational Origin. W. J. O'Donovan.—p. 477.
Indicanuria in Dermatology. F. Krone and I. H. McGaw.—p. 482.

Arsenic Cancer as Occupational Disease.—O'Donovan cites three cases of skin cancer occurring in men who worked with sheep-dip. Sheep-dip is an arsenite of sodium containing arsenic sulphid and free arsenous oxid. The process of manufacture is very dusty.

36: 515-590 (Dec.) 1924

*Benign Lymphogranuloma: Cutaneous Manifestations. J. Schaumann.—p. 515.
*Chronic Relapsing Polydermatomyositis. F. P. Weber and A. M. H. Gray.—p. 544.

Benign Lymphogranuloma.—Schaumann believes that the lymphadenic affection he has designated by the name of benign lymphogranuloma is caused by the tubercle bacillus and probably by its bovine variety.

Chronic Relapsing Polydermatomyositis.—Weber and Gray suggest that dermatomyositis is most probably to be regarded as a widespread patchy parenchymatous acute degenerative or necrotic process of toxic origin, generally relapsing, and chiefly affecting the striped muscles and subcutaneous tissue. The other pathologic changes are, according to this view, the results of nonsuppurative inflammatory and regenerative reaction in the parts involved and their surroundings.

Calcutta Medical Journal

19: 179-218 (Nov.) 1924

*Cultivation of Cholera Vibrio from Feces. G. C. Maitra and J. B. Basu.—p. 179.
Nasal Polypus. U. N. Das.—p. 181.
Vitamins. A. Roy.—p. 190.
Reactions after Intravenous Administration of Quinin. C. C. Sanyal.—p. 199.
Results of Administration of Serum Per Rectum. C. C. Sanyal.—p. 199.

Cultivation of Cholera Vibrio from Feces.—Maitra and Basu assert that 0.5 per cent. sodium taurocholate added to ordinary agar of p_H 7.6 is quite a workable medium for cholera cultivation both for direct plating from stool and from peptone water culture, and is much more preferable to such complicated mediums as Dieudonne's and McConkey's.

Glasgow Medical Journal

102: 273-351 (Nov.) 1924

Limitations of Surgery, Past and Present. A. Young.—p. 273.
General Practitioner and Tonsils. J. K. Love.—p. 314.
Ileocolic Intussusception Due to Fibrolipoma of Ileum. G. C. Swanson.—p. 326.

Indian Medical Record, Calcutta

64: 321-350 (Nov.) 1924

Medical Education in Bengal. B. N. Ghosh.—p. 321.
Etiologic Factors of Tuberculosis in India in General and Bengal in Particular. A. Roy.—p. 326.
*Cod Liver Oil in Typhoid. K. C. Dutt.—p. 330.
Vitamins in Health and Disease. A. K. M. Abdul Wahed.—p. 331.

Cod Liver Oil in Typhoid.—In all cases of typhoid and paratyphoid fever in which sufficient milk or other nutritious food cannot be given by mouth, Dutt administers a cod liver oil nutrient enema for the purpose of supplying the fat and vitamin necessary to make up for the tissue waste which is inevitable in all cases of typhoid. The dose and the time of administration should be regulated according to the age, toleration and condition of the patient.

Irish Journal of Medical Science, Dublin

529-572 (Dec.) 1924

Anatomist in Art. William Doolin.—p. 529.
Early and Premorbid Diagnosis. J. T. Wigham.—p. 549.
Medical Aspects of Recent Advances in Biology of Sex. F. W. Rogers Brambell.—p. 560.

Journal of Hygiene, London

23: 117-239 (Nov.) 1924

Plague Investigations in Egypt. G. F. Petrie and R. E. Todd.—p. 117.
*Influence of Weather Conditions on Mortality from Bronchitis and Pneumonia in Children. M. Young.—p. 151.
Anthropometric Studies of Glasgow School Children. P. L. McKinlay.—p. 176.
Physique of Glasgow School Children. A. M. T. Tully.—p. 186.
Biologic Characteristics of B. Enteritidis (Aertrycke). W. W. C. Topley and J. Ayrton.—p. 198.
Spread of Bacterial Infection: Experimental Epidemic of Mouse Typhoid. W. W. C. Topley, J. Ayrton and E. R. Lewis.—p. 223.

Influence of Weather on Mortality of Respiratory Diseases.—An analysis has been made by Young of the correlation coefficients found between the number of fatal cases from bronchitis, pneumonia and respiratory diseases, or the two summed together, in children under 5 years of age in London, Glasgow, Edinburgh, Aberdeen and Dundee, and the meteorologic factors, mean and mean minimum temperature, mean relative humidity and mean rainfall, for a period of from 40 to 50 years; and between the death rates from bronchitis, pneumonia and respiratory diseases among children at the same period of life in the registration counties of England and Wales in the decennia, 1901-1910 and 1891-1900, and their mean annual temperature and mean annual rainfall. The meteorologic factor, among those investigated, that seems to exercise the greatest influence in predisposing to an increased mortality from and, presumably, an increased incidence of bronchitis in children in the cities, is the prevailing temperature. In accordance with the average duration of the disease, the mortality is most intimately related to the mean temperature of the preceding week, and is, on the average, as closely related to the mean temperature of two weeks before as it is to that of the corresponding week. The relationship is inverse: the lower the mean temperature the greater the fatality from bronchitis. While there is a suggestion from some of the correlation coefficients found, that pneumonia in children may have some inverse relationship to mean temperature, this association is not shown in the monthly or weekly data generally. There is a definite inverse relationship between the mortality from the respiratory diseases, or bronchitis and pneumonia summed together, and the mean temperature; and, as occurs with bronchitis, the relationship to the mean temperature of the preceding week is closer than to that of the corresponding week. The mortalities from bronchitis and pneumonia in children in the cities examined and in the registration counties are not influenced in any consistent manner or degree by the amount of rainfall. While the coefficients of correlation between the corrected monthly deaths from bronchitis and respiratory diseases, respectively, and the corresponding mean monthly humidity in Glasgow seem to suggest the existence of a significant direct association between these variables, viz., the moister the atmosphere, the higher the death rate from bronchitis; such a relationship is not definitely in the coefficients found for the other cities. There would appear to be some evidence for the view that a high relative humidity, when associated with a low temperature, has some influence in predisposing to an increased mortality from the respiratory diseases.

Journal of Neurology and Psychopathology, London

5: 195-288 (Nov.) 1924

*Occurrence of Abnormal Deposits of Iron in Brain in Parkinsonism. J. Lhermitte, W. M. Kraus and D. McAlpine.—p. 195.
*Primary Tumors of Optic Nerve and of Chiasma; Case. W. G. Wyllie.—p. 209.
Benign Extravertebral Tumors Producing Symptoms of Spinal Cord: Three Cases. C. J. Rohwer.—p. 220.
Occurrence of Fits in Syringomyelia. J. P. Martin.—p. 227.

Abnormal Iron Deposits in Brain in Paralysis Agitans.—This paper by Lhermitte, Kraus and McAlpine is based on the pathologic findings observed by them in a case of paralysis agitans in a male, aged 53, at the time of his death. The disease first showed itself in 1919. Clinically his affection was notable for the complete absence of tremor. Intracellular iron normally present in the globus pallidus was diminished in amount. In the substantia nigra, it was present in normal amounts. Abnormal deposits of a siderophilic substance were found in each globus pallidus, in the form of globules; this substance was also found in vessel walls. The deposit was mainly in the form of globules, while the vessels were much less affected. This distribution is unusual and differs from that found occasionally in paralysis agitans and other conditions, in which the deposit is for the most part in the vessel

walls. The present findings more closely resembled in this respect the deposits present in some cases of epidemic encephalitis. Cellular changes were present in a typical form in the globus pallidus, the cells being reduced to half of their normal number. This finding is in accordance with Lhermitte's previous experience in the pathology of paralysis agitans. A definite lesion was also present bilaterally in the substantia nigra.

Primary Tumor of Optic Nerve.—The case described by Wyllie was one in which a glioma affected the intracranial portions of both optic nerves and the chiasma, and in which an entirely separate tumor of the same nature was present in the brain.

Journal of Physiology, London

59: 99-258 (Oct. 9) 1924

*Effect of Cerebral Anemia on Blood Pressure and Respiration. F. Roberts.—p. 99.
*Taking Up of Carbon Monoxid by Hemoglobin of Spleen. A. Hanak and J. Harkavy.—p. 121.
Renal Function in Summer Frogs and Winter Frogs. J. de Haan and A. Bakker.—p. 129.
Changes in Alveolar Carbon Dioxid Pressure after Violent Exercise. J. B. S. Haldane and J. H. Quastel.—p. 138.
Effect of Curari and Denervation on Electrical Excitability of Striated Muscle. C. F. Watts.—p. 143.
Influence of Blood Supply on Pancreatic Secretion. B. P. Babkin.—p. 153.
*Location and Nature of Action of Insulin. J. H. Burn and J. H. Dale.—p. 164.
*Effect of Insulin on Blood Volume. J. B. S. Haldane, H. D. Kay and W. Smith.—p. 193.
*Glomerular Control of Kidney Blood Flow. J. M. O'Connor.—p. 200.
Constancy of Basal Metabolism. G. Lusk and E. F. Du Bois.—p. 213.
Effect of Variations in Blood Pressure on Pulse Wave Velocity in Brachial Artery in Man. S. K. Hickson and B. A. McSwiney.—p. 217.
Comparison of Blood Curves Constructed with Arterial and with Venous Blood. F. R. Fraser, G. Graham and R. Hilton.—p. 221.
The Vasomotor Centers. III. Spinal Vascular (and Other Autonomic) Reflexes and Effect of Strychnin on Them. J. N. Langley.—p. 231.

Effect of Cerebral Anemia on Blood Pressure.—Roberts' research shows that both the vasomotor and cardio-inhibitory centers are directly stimulated by a slight diminution in their blood supply. The resulting inhibition checks and sometimes annuls the rise of pressure which vascular constriction tends to produce. Rarely the pressure in the Circle of Willis can be raised by the occlusion of a cerebral artery. The respiratory center is totally insensitive to diminution in its blood supply until this diminution becomes extreme. There is a certain critical circle pressure varying between 18 and 6 mm. in different individuals, at which the respiratory center is paralyzed and the vasomotor center strongly stimulated. Stimulation of the cardio-inhibitory center immediately follows. When the reduction in blood supply is gradual the blood pressure rises but slightly owing to the fact that the cardio-inhibitory center is stimulated simultaneously with the vasomotor center. Evidence is presented which suggests that under conditions of defective nutrition discharges from the respiratory center may suffer a decrement and be suppressed somewhere on their way to the periphery. When the medulla is completely or almost completely anemic, injection of lactic acid directly into a cerebral artery stimulates the vasomotor center but is without effect on the already paralyzed respiratory center. Hemorrhage is not attended with any increase in breathing until a very low pressure is reached. Hyperpnea of variable degree then occurs.

Carbon Monoxid in Spleen.—The observation is confirmed by Hanak and Harkavy that when rats are placed in atmospheres containing carbon monoxid, the hemoglobin in the blood comes into equilibrium with that gas much more rapidly than it does with the hemoglobin of the spleen pulp.

Action of Insulin.—Experiments by Burn and Dale show that the initial stage in the metabolic sequence initiated by insulin, the disappearance of dextrose from circulation, can occur quite normally in the absence of all tissues with an important metabolism, except the heart and the skeletal muscles. This does not exclude the possibility that other organs, may be equally concerned in this process, as seen in the whole animal; but it does not allow us to regard any of them as they do not play a special and indispensable part in it. This observation appears to give a definite negative, on the other hand, to such an hypothesis as that of Laufberger, which supposes that insulin simply stops the new formation of sugar from fat, while the sugar already present as such continues to be used at the normal rate. The experiments show that the removal from circulation of artificially infused dextrose may be accelerated by insulin to a rate many times the normal; the fall of blood sugar is certainly due, therefore, to acceleration of removal, and not to restriction of supply.

Effect of Insulin on Blood Volume.—Haldane, Kay and Smith found that the administration of insulin to normal rabbits leads rapidly to a very appreciable rise in the blood volume. Comparative quantitative determinations in blood before and after the giving of insulin, particularly in the case of substances not equally distributed between the corpuscles and the plasma, can be accepted only if this volume change is taken into account. The osmotic pressure of serum remains the same before and after the injection of insulin.

Glomerular Control of Kidney Flow.—Owing to the anatomic structure of the kidney a secretion pressure of the urine at the head of the uriniferous tubule could not go above the pressure of the blood in the capillaries of the malpighian tuft without cutting off the blood supply from the kidney tubules. This in O'Connor's opinion would explain on a purely secretory theory the dependence of the formation of urine on the blood pressure. A similar cutting off of the blood flow through the kidney might be expected to occur when the blood pressure falls.

Medical Journal of Australia, Sydney

2: 567-590 (Nov. 29) 1924

Rheumatoid Arthritis. C. T. C. de Crespigny.—p. 567.
Examples of Physical and Mental Testing. R. J. A. Berry.—p. 570.
Omentopexy. D. P. O'Brien.—p. 574.
Two Cases of Diabetes Mellitus. J. H. Halliday.—p. 576.
Acute Pneumonic Tuberculosis: Case. C. Harvey.—p. 578.

Medical Journal of South Africa, Johannesburg

20: 83-114 (Nov.) 1924

Position of South African Nurse. J. Tremble.—p. 96.
Case of Neuroparalytic Corneal Ulcer. A. G. Brinton.—p. 98.
Law and Doctor in South Africa. H. de Villiers.—p. 99.

Tubercle, London

6: 1-56 (Oct.) 1924

*Tuberculosis in Man and Domesticated Animals. Relative Susceptibility to Disease of Various Organs. L. Cobbett.—p. 1.
Bacteriologic Characteristics of One Hundred Strains of Tubercle Bacilli Isolated from Sputum. W. J. Tulloch, W. T. Munro, G. R. Ross and W. M. Cumming.—p. 18. (To be continued.)
Observations on Children Admitted to Tuberculosis Dispensary. C. R. Austrian.—p. 29.
Graphic Method of Reporting Chest Roentgenograms. J. W. Weber.—p. 43.

Susceptibility to Tuberculosis.—Susceptibility to tuberculosis, Cobbett says, depends according to this view on the strength of the demand made by the organ or system for some particular kind of fatty food, which food happens to resemble in its chemical affinities the fatty part of the tubercle bacillus. In the case of extremely susceptible organs one must suppose that the demand for this particular kind of food is great; while in the case of organs which are seldom the seat of tuberculosis in most species, and yet susceptible in greater or lesser degree in one or more species, a demand, which, in the majority of instances, does not exist, or is very small, has in the exceptional species been developed to a greater or lesser extent. This hypothesis may be an explanation of the fact so tragically demonstrated during and immediately after the war, especially in central Europe, that a shortage of fats is accompanied by a great increase in the death rate from tuberculosis. For a liberal supply of fats, or of some particular fat resembling that of the bacilli, will satisfy the demand made by the susceptible organs, and in proportion to the extent that this demand is satisfied by so much will their tendency to annex tubercle bacilli be diminished.

Annales des Maladies Vénériennes, Paris

19: 801-864 (Nov.) 1924

Cockade Form of Syphilitic Roseola. S. Nicolau.—p. 801.
Ulcerous Balanitis. Lévy-Bing and Gerbay.—p. 807.
*Herpes in the Uterus. G. Belgodère.—p. 813.
Recurrence and Bismuth Doses in Syphilis. Barthélemy.—p. 819.
*Zinc Chlorid in Treatment of Bartholinitis. Gouin and Aoustin.—p. 823.

Herpes in the Uterus.—Belgodère believes that herpes, when localized in the uterine cervix, may easily degenerate into an ulceration. Hence a large percentage of cases of ulcerative disease of the uterus are, probably, in reality herpetic metritis.

Zinc Chlorid in Bartholinitis.—Gouin and Aoustin extol zinc chlorid in treatment of gonorrheal bartholinitis. A few drops of a 10 per cent. solution are injected into the gland. The resulting inflammatory reaction usually subsides after two days. The bloody fluid that can be expressed from the gland for about five days contains polymorphonuclear and epithelial cells, but no gonococci. The good results obtained in 100 cases of unilateral and double bartholinitis have convinced them that this treatment should be preferred to operative measures.

19: 865-944 (Dec.) 1924

*Auto-Inoculation with Venereal Disease. J. Lacassagne and Pigeaud.—p. 865.
*Recurrences During Bismuth Treatment in Syphilis. J. Gouin and M. R. Aoustin.—p. 881.

Intentional Auto-Inoculation of Physicians for Study of Venereal Diseases.—Lacassagne and Pigeaud give a long list of physicians in various countries, from Hunter in 1767 to Reenstierna's recent auto-inoculations with chancroid. They add that such devotion to science "deserves the gratitude of humanity and the admiration of scientists."

Recurrences in Syphilis Under Bismuth Treatment.—Gouin and Aoustin observed a generalized secondary roseola in one patient at the seventh injection of an insoluble bismuth. Three following injections only aggravated the eruption. In another patient, syphilids on the palms first vanished after ten intravenous injections of a soluble bismuth, but reappeared, even more pronounced, at the seventeenth injection. Arsphenamin, with or without mercury, proved effectual in both cases.

Bulletins de la Société Médicale des Hôpitaux, Paris

48: 1695-1722 (Dec. 12) 1924

*Research on Dick Test. C. Zoeller.—p. 1696.
Case of Pure Word Blindness. Michaux, Lamache and Picard.—p. 1703.
Vein Sign of Compression of Superior Vena Cava. M. Chiray and R. Stieffel.—p. 1707.
*Mechanism of Bronchiectasis. Sergent et al.—p. 1709.

The Dick Test.—Zoeller states that the first results of his research tend to confirm the value of the Dick reaction. In 125 persons tested, thirty-eight were found receptive, all recently recovered from some nonscarlatinal affection. The streptococcus toxin, procured from the United States, was injected in three subjects with a past history of scarlet fever. The test was negative in two, with the disease dating back seventeen years or nine months. In the third subject, with scarlet fever four months before, there was a slightly positive reaction. In a patient with scarlet fever in the stage of development, the reaction was positive on admission, and also the third day, but proved negative the eighth day. Serum from a subject with negative reaction inhibits the Dick reaction in a subject susceptible to the disease. The neutralization evidently depends not only on the susceptibility, but also on the amount of the streptococcus antitoxin in the serum. The fact that the patient's serum does not neutralize the Dick test at the onset of scarlet fever, as it does during convalescence, seems to prove the specific character of the toxin. Two serums were injected simultaneously in one patient with scarlet fever in the stage of eruption. One was from a subject having had scarlet fever many years before, the other serum was from a subject with a negative reaction, but without a history of scarlet fever. The Schultz-Charlton extinction phenomenon was obtained with both serums. It was more pronounced with the first than with the second. Immunization through disease and immunization by streptococcus toxin proved thus to be of the same nature.

Factors in Bronchiectasis.—Sergent, Pruvost and Cottenot noted three phases in their case: first a left subacute tuberculosis, in a young woman seemingly recovered from bronchitis in the left apex, nine years before. The second phase was characterized by fibroid changes with retraction of the left hemithorax and displacement toward the left of the mediastinum, trachea and main bronchus. This phase lasted a year, without coughing or expectoration. Then came symptoms suggesting a cavity, but no tubercle bacilli were detected. The present signs correspond to dilatation of the bronchi.

48: 1723-1748 (Dec. 19) 1924

Desquamation of Tongue in Scarlet Fever. J. Comby.—p. 1723.
Left Pleurisy with Right Tuberculosis Treated by Pneumothorax. E. Rist and E. Coulaud.—p. 1726.
Case of Extreme Obesity. H. Grenet and L. Pellissier.—p. 1728.
*Polyneuritis After Pneumothorax. Lévy-Valensi et al.—p. 1733.
*Hirsutism in Endocrine Disease. Crouzon et al.—p. 1735.
Experiments in Correction of Hemophilia. R. Feissly.—p. 1739.
Reflex Signs of Cholelithiasis. J. C. Mussio Fournier.—p. 1742.
*Phrenicotomy in Treatment of Lung Cavities. Rolland et al.—p. 1746.

Polyneuritis Succeeding Pneumothorax.—Lévy-Valensi, Philbert and Lechaux observed a motor and sensory neuritis of the four limbs, following an artificial pneumothorax, in a tuberculous girl, aged 17. This case, as well as two analogous cases in tuberculous patients under treatment with arsenic, or in alcohol poisoning, suggest that the pneumothorax may exceptionally act like a trauma, mobilizing bacilli and toxins.

Hirsutism Associated with Mild Diabetes and Ten Months of Absolute Mutism.—The patient was a woman, 32 years old. Amenorrhea of seven years' standing, abnormal hairiness, and adiposis resembling Dercum's disease, were the main features suggesting endocrine upset.

Phrenicotomy in Tuberculous Cavity in Lung.—Rolland, Maurer and Valtis add a new case in a woman, aged 32, to their ten in which phrenicotomy had been performed with excellent results in treatment of cavities in the lungs. A previous artificial pneumothorax had been temporarily successful, but adhesions between the lung and the diaphragm kept the cavity gaping. At once after resection of the phrenic nerve, the paralyzed diaphragm rose by 10 cm., measured during inspiration, and the cavity shrank to half the size.

Comptes Rendus de la Société de Biologie, Paris

91: 1299-1358 (Dec. 19) 1924. Partial Index

*Peroxydases in Animals' Serum. Brocq-Rousseu and G. Roussel.—p. 1300.
*Vaccination by Vaccine in Form of Snuff. G. Sanarelli.—p. 1302.
Hairs Growing in Bones. Doyon.—p. 1304.
Lipoid Balance of Blood Serum. Grigaut and Yovanovitch.—p. 1310.
Experimental Diphtheria by Way of Genital Organs. C. Zoeller and Mancussakiss.—p. 1313.
*Dick Test in Yellow Race. C. Zoeller.—p. 1315.
*Tuberculosis Reinfection of Rabbits. Philibert and Cordey.—p. 1321.
Action of Radium on Peripheral Nerves. N. A. Dobrovolskaia-Zavadskaia.—p. 1322.
*Bacteriophage Allows Cultivation After Filtration. P. Hauduroy.—p. 1325.
*Acid Production in Autolysis of Bacteria. Lemoigne.—p. 1329.
*Recuperation of Exsanguinated Dog. Barthélemy.—p. 1332.
*Passage of Pituitary Colloid into the Brain. R. Collin.—p. 1334.
High Protectoxic Properties of Old Vaccines. P. Simonin.—p. 1335.
Micro-Ureometer. G. Etienne and M. Verain.—p. 1337.
*Immunization Against Typhus with Living Vaccine. H. Sparrow.—p. 1342.
*Saliva Test for Uremia. M. Landsberg.—p. 1345.
Stimulation of Gastric Juice Secretion by Slow Intravenous Injection of Histamin. B. Gutowski.—p. 1346.
*Heart Center in Brain. A. Radovici and V. Dimitriu.—p. 1351.
*Differential Test for Leprosy. S. Nicolau and A. Banciu.—p. 1352.
*Sensitization of Small Area of Skin. S. Nicolau.—p. 1354.
The Kiss as a Form of Speech. Noica.—p. 1356.

Peroxydases and Serum.—Brocq-Rousseu and Roussel conclude from their research on 213 horses, five cattle, five sheep and other animals, that the serum of animals does not contain any peroxydases.

Vaccination by the Nose.—Sanarelli asserts that vaccination with a pulverized vaccine, insufflated into the nose, may induce an equal, or even a markedly higher, rate of agglutinins in human blood than with ordinary vaccines injected subcutaneously. Nasal inoculation with combined pulverized typhoid and cholera vaccines, caused a rapid and abundant appearance of anticholera agglutinins. The process is slower

with dysentery vaccine, and requires association with typhoid vaccine for a 1:50 reaction. The agglutinin titer (1:200) in human blood, after a month's nasal administration of antimeningococcus vaccine, equals or surpasses the titer in meningitis, or under antiserum treatment, and even the highly specific agglutinating serum obtained by intravenous inoculation of rabbits with living cultures.

The Dick Test in Yellow Races.—Zoeller applied the Dick skin test to fifty Anamese for study of the susceptibility to scarlet fever in the yellow race. None gave a decided positive response to the usual technic, and 8 per cent. only a faint reaction, while in two subjects a typical reaction was obtained by doubling the dose. Not all of the ten men with a negative Dick test had antitoxin in their serum. The immunity in these subjects may be due to indifference of the tissues to streptococcus toxin, or to neutralization of the toxin by a process of local defense. A negative Dick test was manifest also in three negroes. The findings confirmed epidemiologic experience in regard to the higher immunity to scarlet fever in the yellow race, compared to the white.

Pulmonary Reinfection with Tuberculosis in Rabbits.—Philibert and Cordey's research on rabbits showed that a healed pulmonary tuberculous affection early in life induces a higher susceptibility in the animal to reinfection in the same organ later. Evidently, vaccination does not occur.

The Bacteriophage Allows Secondary Cultures After Filtration.—Hauduroy declares that the only explanation he can suggest for the phenomena observed is that the dysentery bacilli, under the action of the bacteriophage, change into an invisible form which is able to pass through the filters and start cultures anew.

Production of Acids in Microbian Autolysis.—Experiments with what Lemoigne calls *Bacillus M*—resembling *Bacillus megatherium*—proved that the acid produced by autolysis of the bacillus was mostly beta-oxybutyric acid. Acid phosphates liberated by the autolysis formed 3 per cent. of the total acidity; this seems to be a general phenomenon.

Acacia in Experimental Exsanguination.—Barthélemy reports his fifth experiment on a dog in which intravenous injection of acacia in a physiologic saline solution was followed by complete recovery of the dog after the removal of 70 per cent. of its blood. An amount of the acacia solution corresponding to half of the blood removed was injected immediately after the withdrawal of the blood. Failure in ten other instances is ascribed to the fact that more than 70 per cent. of the total blood was removed, estimating it at one-thirteenth of the total weight.

Passage of Pituitary Colloid into the Brain.—Collin found by observations on dogs that the colloid which is produced in the pituitary passes through the infundibulum. He traced it up to the nuclei of the tuber. This suggests the question as to action of the colloid on the nerve cells in the tuber region.

Immunization Against Typhus.—Sparrow describes the serial method of subinfecting doses of a vaccine with which he immunized guinea-pigs against typhus. Of the 100 guinea-pigs, sixty-eight served for controls. He used an emulsion of guinea-pig brain taken at the acme of experimental typhus infection.

Saliva Test for Uremia.—Landsberg estimates the urea in the blood by means of Ehrlich's reagent applied to the saliva (green tint in presence of urea to more than 0.5 per thousand). His previous experiments demonstrated that the urea content of the saliva is almost the same as in the blood serum.

Localization of Vasomotor and Heart Rhythm Centers.—Radovici and Dimitriu's clinical study of a case of what seemed to be a tuberculoma in the rolandic convolution, has apparently demonstrated that the vasomotor and heart accelerating centers are localized in the perirolandic convolutions. The boy had convulsions in the left side of the body, accompanied by pain in the precordial region and left arm. The peak of the acceleration of the cardiac rhythum and increase of the systolic arterial tension coincided with the involvement of the arm in the spasm, and with the maximal pain in the area over the heart. These changes subsided with the paroxysm, which lasted from two to three minutes. There were often as many as 100 attacks in the twenty-four hours. Slight bradycardia was sometimes noted at the end of the paroxysm.

Wassermann Test in Leprosy and in Syphilis.—Nicolau and Banciu emphasize that the serum of lepers manifests a more pronounced deviation of complement in presence of the Wassermann antigen than the serum of syphilitics. This differential sign was helpful in a case of incipient leprosy with a still uncertain diagnosis.

Localization of Sensitization of the Skin.—Nicolau describes a case of idiosyncrasy in which application of a mercurial plaster induced a local dermatitis. The sensitization of the diseased area persisted after general desensitization of the skin. Desensitization was finally realized by three exposures to roentgen rays, a total of five skin units.

Lyon Chirurgical

21: 649-819 (Dec.) 1924

*Physiologic Importance of the Gallbladder. E. Dahl-Iversen.—p. 649.
*Transplantation of Kidneys. A. Avramovici.—p. 734.
Shot Device to Hold Catheter in Penis. Vaquier.—p. 758.

Influence of Cholecystectomy on Gastric Secretion.—This communication from the Animal Physiology Institute of the Veterinary College at Copenhagen, of which Møllgaard is director, presents evidence that removal of the gallbladder in dogs, monkeys and rabbits notably increased the secretion of pepsin. The pylorus also showed impairment of its tonus, with no evidence of a compensating dilatation of the biliary ducts. Serial Ewald test meals for forty-one days in two healthy young men yielded an average of 0.597 per cent. free pepsin and 0.802 per cent. total pepsin. The extremes were 0.411 and 1.045. Cholecystectomy did not seem to modify the secretion of hydrochloric acid in the animals.

Transplantation of Kidneys.—Avramovici transplanted one kidney from one dog into a second, just nephrectomized, dog and the four pairs of dogs survived from ten to sixty days. In nine dogs the whole mass comprising both kidneys, their vessels and ureters, was transplanted, with survivals up to seventy-three days. One dog lived for fifty-eight days after transplantation of the kidneys *en masse* from a cat, preceded by interchange of transfusion of serum. The implanted kidney seemed to function normally. Kidney transplants kept in Locke's solution for up to twelve hours were able to heal in place and function. With a unilateral transplantation of this kind, one dog survived for thirty-six days; another for twelve days after transplantation of the whole kidney block taken from another dog six hours before. He regards the unexpectedly favorable results of this homonecrotransplantation as fraught with great clinical promise.

Paris Médical

533-548 (Dec. 27) 1924

Spontaneous Immunization Against Diphtheria. P. Lereboullet and Jeannon.—p. 533.
*Etiology of Paget's Disease. G. Thibierge.—p. 539.
Milk Mixed with Protein and Cream in Feeding of Infants. L. Exchaquet.—p. 543.
*Radiography of Livierato's Heart Test. L. Grossi.—p. 546.

Nature of Paget's Disease.—Thibierge insists that Paget's osteitis deformans is not of syphilitic origin. But, evidently, bones affected with syphilis, the same as bones injured in other ways, are more susceptible to the disease, and consequently the two diseases may often coincide.

Livierato's Heart Test for Hypotonia.—Livierato's two reflex heart tests have been studied by Grossi with roentgen control. The abdominocardiac sign (right enlargement of the area of dulness over the heart on mechanical stimulation of the abdominal aortic plexus) in determination of cardiac hypotonia has been completed by his orthocardiac reflex. This reflex consists in a spontaneous enlargement of the right heart, occurring on change from the reclining to the erect posture, and the spontaneous return to the previous condition when the subject lies down again. The orthocardiac reflex is symptomatic of a more pronounced hypotonia of the myocardium. Radiography of the two reflexes is not only valu-

able in estimation of the heart tonus, but also in early diagnosis of heart insufficiency, before clinical examination reveals it.

Presse Médicale, Paris

33: 17-32 (Jan. 7) 1925

*Skin Xanthochromia. M. Labbé.—p. 17.
*Thalamus and Striate Body in Infants. E. Lesné and C. Richet, Jr.—p. 18.
*Percussion in Latent Nephrolithiasis. J. R. Goyena.—p. 19.
*Abdominal Aortitis. R. A. Gutmann and D. Routier.—p. 20.

Skin Xanthochromia.—Labbé emphasizes that no relation exists in this syndrome between the intensity of the skin tint and the amount of cholesterol in the blood. Xanthochromia, like xanthoma, may be caused by a deficient metabolism of lipoids, which explains its frequent coexistence with grave diabetes. The treatment consists in a fat-deficient diet.

Functioning of Thalamus and Corpus Striatum in Infants.—While Virchow insisted that the spinal cord, the seat of reflex action, is the only active part of the nervous system in the newly born, Collin asserts that the activity of the thalamus and of the striate body is manifest also even in the first days of life. The functioning is revealed by rhythmic movements of the arms and legs, which may be noted till the sixth or seventh month.

Deep Percussion in Latent Nephrolithiasis.—Goyena calls attention to the severe pain produced by deep percussion in the lumbar region, while the patient is standing or sitting, slightly bent forward. He strikes with the ulnar margin of the hand along the dorsolumbar region from the eighth vertebra downward. The percussion induces a stablike pain when the affected organ is reached. Goyena affirms that this percussion sign has proved useful in numerous cases, especially in those with a misleading appendicitis diagnosis.

Gastralgic Form of Abdominal Aortitis.—Gutmann and Routier observed in the last two years sixteen patients with two characteristic paroxysms of pain in the epigastrium, a slight one after meals, and another, three or four hours later. Syphilis could be incriminated only in two. The digestive arterial hypertension distends the inflamed tissues and plexus in this attenuated periviscerititis. This causes the painful paroxysm. Prolonged treatment by injections of iodized oil, with diathermy and light treatment are effectual. Resection of all the visible nerve branches of the stomach in one case was followed by a complete relief from the pains.

Revue Franç. de Gynécologie et d'Obstét., Paris

19: 665-712 (Nov. 25) 1924

*Hour of Onset of Labor. J. R. Henry.—p. 665.
*Hydrocephalus in Successive Pregnancies. M. Wetterwald.—p. 668.

Hour of Onset of Labor.—In 1,000 normal cases, Henry noted that the labor pains started mostly between 8 p. m. and 8 a. m., while delivery occurred usually between midnight and noon.

Hydrocephalus in Two Children of the Same Mother.—Wetterwald relates that a woman gave birth twice in succession to infants with hydrocephalus. The first and second pregnancies had terminated with a somewhat premature delivery of normal infants. With the hydrocephalus, there was malformation of the genital (male) organs in both children.

Schweizerische medizinische Wochenschrift, Basel

54: 1165-1188 (Dec. 18) 1924

*Epidemics in Basel. E. Jessen.—p. 1165.
*Heredity and the Bones. H. R. Schinz.—p. 1176. Conc'n.
Congenital Diaphragmatic Hernia. Rabbinovitz and Zoppino.—p. 1181.

Epidemics in Basel.—Jessen publishes detailed statistics on measles, scarlet fever, diphtheria and whooping cough in Basel in the years 1870-1919.

Heredity and the Bones.—Schinz here concludes with a bibliography his study on hereditary factors in the structure of the bones.

Policlinico, Rome

31: 1647-1681 (Dec. 15) 1924

Anatomy of Facial Expression. Parenti.—p. 1647.
*Eclampsia Type of Encephalitis. R. Bompiani.—p. 1651.
"Treatment of Pruritus." E. Freund.—p. 1654.
*Natural Versus Artificial Heliotherapy. G. Capuani.—p. 1655.

Eclampsia Type of Encephalitis.—Bompiani observed a case of epidemic encephalitis in a young woman in the fifth month of pregnancy. The symptoms—with the exception of the too slight albuminuria—were at first those of eclampsia.

Natural Versus Artificial Heliotherapy.—Capuani compares the natural with the artificial sunlight. The advantages of the natural sunlight are: the open air life in the colony, the optimal composition of the spectrum, and the increased resistance of the body to "colds." The artificial light has the advantage of cheapness of treatment ("the poor man's sun") and of time saving. It may be applied to the natural cavities. The treatment further may be more energetic, and is always ready for use.

Archivos Españoles de Pediatría, Madrid

8: 643-706 (Nov.) 1924

*Insufficiency of the Liver in Children. C. Sainz de los Terreros.—p. 643.
Dystrophias in the Breast-Fed. C. Torres Umaña.—p. 662.
Progressive Wasting of Muscles in Boy. G. Vidal Jordana.—p. 671.

Insufficiency of the Liver in Children.—In 25 per cent. of the twenty-three cases analyzed by Sainz de los Terreros, there had been preceding disease of the liver, and in all the others there was a history of previous gastro-intestinal pathologic conditions. In his experience, dieting and liver organotherapy restored the liver function to clinically normal in nearly every case. He emphasizes the success of substitution organotherapy in these cases, in marked contrast to the frequent failure of organotherapy in other conditions. In thirteen cases there were periodical recurrences of the toxic symptoms, but the attacks soon yielded to treatment. In the others, the aspect long suggested tuberculosis, but under treatment for insufficiency of the liver, conditions righted themselves in time.

Deutsche medizinische Wochenschrift, Berlin

50: 1785-1824 (Dec. 19) 1924

*Treatment of Cholelithiasis. F. Umber.—p. 1785.
*Antagonism of Insulin and Pituitary. Joachimoglu and Metz.—p. 1787.
Psychanalysis and Psychiatry. Birnbaum.—p. 1788. Cont'd.
*Nature of Complement. F. Klopstock.—p. 1790.
*Basophilic Stippling. H. Lehmann.—p. 1792.
*Pernicious Anemia and Cancer. A. Sonnenfeld.—p. 1794.
*Transplantation of Testes. Rohleder.—p. 1796.
Enchondral Ossification. A. Eckert-Möbius.—p. 1798.
*Degeneration of Osteoblastic Tissue. C. Rohde.—p. 1799.
Nature of Hypnosis. F. Densow.—p. 1800.
Treatment of Neurogenous Eczema. K. Mosse.—p. 1802.
Sterilizing Device for Catheters. H. Schirokauer.—p. 1803.
Dermatomycoses. I. Grütz.—p. 1804.
Scientific Research in Soviet Russia. Semaschko.—p. 1807.
War Disabilities and Pensions. F. Buttersack.—p. 1809.
Supply of Physicians. E. Mayer.—p. 1811.
Haff Disease. W. Ewig.—p. 1822. Conc'n.

Treatment of Cholelithiasis.—Umber emphasizes the fact that any infection of the biliary passages—including the smallest bile ducts in the liver—may simulate a gallstone attack. These infections are, however, usually associated with fever and enlargement of the spleen. Combinations occur. Restriction of cholesterol and of fat which enhances its resorption (cream, butter, egg yolks) is advisable. A subcutaneous injection of 1 mg. of atropin sometimes relieves the colic better than morphin. Daily ingestion of 2-3 gm. of sodium salicylate or 1.5 gm. of hexamethylenamin can be recommended. He had fine results with duodenal infusions of 10-50 c.c. of a 30 per cent. solution of magnesium sulphate, repeated daily or several times a week. The oil cures are apt to disturb digestion, and increase the resorption of cholesterol. Laewen's paravertebral injection near the ninth dorsal spinous process helps in protracted colic. Phlegmonous cholecystitis, empyema, suspicion of cancer, affection of the pancreas, and obstruction of the common bile duct of two or three weeks' duration are absolute indications for surgery. They were given in 4.4 per cent. of his last 771 cases. Chronic recurring gallstone attacks, and the poverty of the patient are relative indications. The mortality is high—especially in patients over 40 years of age, and postoperative disturbances are much more frequent than the surgeons think, since these patients return to the internist.

Only a little over one third of the patients recommended by him for operation were cured. One must not forget that the knife is powerless against the metabolic cause of gallstones.

Antagonism of Insulin and Pituitary.—Joachimoglu and Metz confirm the antagonistic action of pituitary extracts on the insulin hypoglycemia. They believe that it could be utilized for titration of pituitary preparations. There was a certain parallelism between this action and the action on the surviving guinea-pig uterus. When they added insulin simultaneously with pituitary preparations to the perfusing fluid, the contractions were inhibited. No action was observed when insulin was used alone, or added later than the pituitary extracts.

Nature of Complement.—Klopstock summarizes all the facts which speak for the theory that the action of complement is the expression of a certain colloidal structure of the serum, not of a definite substance.

Basophilic Stippling.—Lehmann injected 1 c.c. of a 50 per cent. dilution of alcohol subcutaneously in guinea-pigs. Within two days he observed erythrocytes with basophilic stippling. Their number reached more than 3 in one field in four days. They decreased then, but another increase was observed later. With low dilutions of alcohol (10 per cent.) only the second increase was marked. He considers the secondary increase as a sign of regeneration, and believes that the primary one is of degenerative nature.

Cancer in Pernicious Anemia.—Sonnenfeld's patient had a typical pernicious anemia with a remission. He died later from a cancer of the stomach which changed his hematologic symptoms a little toward a secondary anemia.

Transplantation of Testes.—Rohleder believes that intratesticular transplantation of a slice of a testis might have good chances of surviving. If the operated man should become a father later, the question whether the donor is not the real father, might present difficulties. He believes that the method might be indicated in treatment of homosexualism, impotency and eunuchoidism, but doubts whether it will ever be popular.

Degeneration of Osteoblastic Tissue.—Rohde's experiments demonstrate anew that the osteoblastic tissue is inhibited in its function, or degenerates, if the normal course of regeneration of bones is disturbed by mechanical conditions. Defective nutrition by the blood, interruption of nervous and functional influence of the surrounding tissues, and premature mobilization are the chief causes. Experimental attempts to produce bone from the connective tissue of the soft parts failed.

Klinische Wochenschrift, Berlin

3: 2321-2368 (Dec. 16) 1924

Pharmacology of Liver. H. Mautner.—p. 2321. Cont'd.
Layer Cataract in Avitaminosis. Stepp and Friedenwald.—p. 2325.
*Erythrocytes from Splenic Vein. Heeres and Russchen.—p. 2327.
*Radiotherapy of Toxic Goiter. F. Gudzent.—p. 2329.
*Diagnosis of Abdominal Disease. Gubergritz and Istschenko.—p. 2331.
Glaucoma and the Vegetative System. Hannemann.—p. 2335.
*Hormonal Relations Between Mother and Child. A. Seitz.—p. 2337.
Hyperventilation Alkalosis and Epinephrin. Duzár and Fritz.—p. 2338.
*Perlingual Use of Insulin. H. Mendel et al.—p. 2341.
Sachs' Rapid Syphilis Reaction. S. Amend.—p. 2342.
*Inhalation of Insulin. Heubner et al.—p. 2342.
*Action of Rays on Insulin. I. I. Nitzescu.—p. 2343.
*Surgery of Seminal Passages. A. v. Lichtenberg.—p. 2344.
Biology of Radiations. H. R. Schinz.—p. 2349. Cont'd.

Erythrocytes from Splenic Vein.—Heeres and Russchen observed many crenated erythrocytes in the blood from the splenic vein in human cadavers and dead animals. They believe that this indicates a hemolytic function of the spleen.

Radiotherapy of Toxic Goiter.—Gudzent had satisfactory results in toxic and exophthalmic goiter with irradiation of the thyroid. He used quite small doses of radium and mesothorium, and filtered the radiation so that only the gamma rays acted.

Diagnosis of Abdominal Disease.—Gubergritz and Istschenko are satisfied with the diagnostic and therapeutic results of paravertebral anesthesia in affections of the stomach and, to a certain extent, of the duodenum, also of liver and kidney.

Hormone Relations Between Mother and Child.—Seitz and Leidenius extirpated the thyroid and suprarenals, respectively, in rabbits. Some of the young rabbits conceived by thyroidectomized mothers showed an enlarged pituitary, while extirpation of suprarenals led to an enlargement of the thymus and of the lymphatic follicles.

Perlingual Use of Insulin.—Mendel, Wittgenstein and Wolffenstein used tablets of dry insulin, which were massaged into the tongue. The necessary dosage was about three times higher than with subcutaneous injections. The maximum amount they recommend for perlingual administration is 30 units, three times a day—each dose corresponding to 10 units in subcutaneous injection.

Inhalation of Insulin.—Heubner, de Jongh and Laquer found insulin effectual when administered by means of an inhalation apparatus

Action of Rays on Insulin.—Nitzescu exposed solutions of insulin to ultraviolet and roentgen rays. The drug remained active. He recommends the ultraviolet rays for sterilization of insulin.

Surgery of Seminal Passages.—Lichtenberg points out that the physiology, clinical observations and the experimental pathology of the seminal vesicles and vasa deferentia are not yet sufficiently advanced to serve as a basis for clear prognosis and indications for treatment. Surgery is indicated in acute and subacute septic inflammations of these organs and of the epididymis. Rheumatism and iritis may suggest a chronic process of this kind. Chronic recurring epididymitis and spermatocystitis with painful symptoms from the bladder, urethra and rectum are relative indications. The impotentia generandi which has to be expected after the operation is not a contraindication, as these patients are usually already sterile. He is opposed to castration in tuberculosis of the epididymis. This affection is never a primary process. Chronic nonspecific epididymitis has caused the sacrifice of hecatombs of testes. Some statistics show 50 per cent. of mistaken diagnoses. Cultures made from the ejaculated fluid might be helpful.

Medizinische Klinik, Berlin

20: 1793-1826 (Dec. 21) 1924

*Acute Cystopyelitis. H. Pollitzer.—p. 1793.
Bronchial Cancer. H. Assmann.—p. 1796. Conc'n.
Perimyelography. R. Stahl and A. Müller.—p. 1799.
Haff Disease. H. Rosencrantz.—p. 1802.
Symposium on Treatment of Gallstones. Finsterer et al.—p. 1803. Cont'n.
*Diabetes and Hypertension. F. Katz-Klein.—p. 1808.
Pupil Changes in Syphilis. R. Hessberg.—p. 1811.
Gaucher's Splenomegaly. L. Pick.—p. 1812. Cont'n.
Obstetric Breviary. F. Eberhart.—p. 1814. Cont'n.
Cancer and Its Treatment. O. Strauss.—p. 1815. Cont'n.

Acute Cystopyelitis.—Pollitzer observed within the last eight months three cases of acute cystopyelitis which were erroneously diagnosed. He came in time to prevent appendectomy in one patient, but the operation had already been done in the second, and cholecystectomy in the third. Because the fever continued, the supplementary diagnosis was "typhoid." Cystopyelitis often begins after exposure to a chilling, and affects usually young girls and women of fair complexion. The right kidney is the site of the disease in two thirds of the cases. High fever, and stiffening of the abdominal muscles simulate appendicitis or cholecystitis, but the calmer pulse, breathing and expression and, above all, the knowledge that colon bacillus cystopyelitis is common in young women lead to a correct diagnosis. Herpes is frequent, the spleen enlarged, and the lumbar region of the affected side shows slight edema. A specimen of urine taken with a sterile catheter is used for examination of the sediment and for cultures. A blood culture is also advisable, because of the possibility of typhoid. Leukocytosis is the rule, but leukopenia may be present at the beginning, as Lenhartz, who described the syndrome, had found. Motor insufficiency of the cecum is usually present, and may account for the ileocecal tumor and for the affection of the kidney by transmigration of colon bacilli through the lymphatics. He advises intravenous infusions of 5 c.c. of a 20 per cent. solution of hexamethylenamin every other day, and daily irriga-

tions of the bowel. Morphin may be used to combat the pains. In grave cases, lavages of the pelvis of the kidney, eventually combined with vaccine treatment, may be necessary. Recurrences are frequent. The main diagnostic aid, he repeats, is to think of this possibility when a young girl has high fever and pains in the abdomen.

Diabetes and Hypertension.—Katz-Klein finds that diabetes associated with hypertension is milder than the type with normal blood pressure. The changes in the blood sugar and the blood pressure during the course of treatment were by no means parallel. She concludes from this that increase in epinephrin cannot be the common cause of both.

Mitteil. a. d. Grenzgeb. d. Med. und Chir., Jena

38: 149-286, 1924

*Bacteriology in Stomach Disease. H. Meyeringh.—p. 149.
*Fat Embolism in the Brain. E. Melchior.—p. 178.
Diagnosis of Carcinoma. F. Bernhard.—p. 204.
*Vasomotor Reflexes After Sympathectomy. H. Böwing.—p. 210.
*Diagnosis of Liver Disease. W. B. Meyer and J. Jahr.—p. 223.
*Hemolytic Jaundice Versus Pernicious Anemia. J. Maas.—p. 237.
Lymphocytosis After Splenectomy. E. L. Beresow.—p. 245.
*Cancer of the Thyroid. B. Breitner and E. Just.—p. 262.

Bacteriologic Study in Gastric and Duodenal Ulcer and Cancer.—Meyeringh reports essential differences between the rich bacterial flora in his twenty-eight cancer cases, and the contrary, with absence of colon bacilli, in 65 per cent. of his twenty-nine cases of gastric and in 33 per cent. of the twenty of duodenal ulcer. Bacteriologic examination of the gastric secretion might be a valuable aid in the differential diagnosis of doubtful cases.

Diagnosis of Fat Embolism in the Brain.—In the first of Melchior's two cases of fat embolism, unexpected recovery from the initial coma was followed by renewed mobilization of fat (probably due to the manipulations in application of a dressing), with fatal relapse. Normal behavior of the pupils and the behavior of the pulse are the most important signs in differentiation of fat embolism of the brain from traumatic intracranial bleeding; bradycardia does not accompany fat embolism. With a fat embolism in the brain, choked disk is not seen, there is usually no headache or vomiting, but multiple punctate hemorrhages in the skin are common, as also fat droplets in the urine. In prophylaxis, attention has often been directed to the perils of transportation. After orthopedic operations, it is well to leave the Esmarch band in place for a considerable time, and then remove it slowly. Early and careful revision of a compound fracture, and amputation are important in prophylaxis and treatment.

Plethysmographic Study of Vasomotor Reflexes.—In all of Böwing's experiments the vasomotor reflexes were maintained after periarterial sympathectomy and were abolished by interrupting the mixed peripheral nerves. At the same time, both procedures caused hyperemia, which he ascribes to a resulting impairment of the tonus of the vessel and the consequent dilatation of the vessel. He asserts that the tracts conveying the vascular reflexes do not accompany the vessels, and only join the vessels on reaching the periphery.

Diagnosis of Liver Diseases by Quinin-Fast Lipase in Blood.—After 300 examinations in 187 patients, eighty-seven with diseased liver, Meyer and Jahr state that they never found quinin-resistant lipase in the serum of persons with normal liver and kidneys, nor with hemolytic jaundice. It seems to accompany progressive destruction of the liver cells, as in cholangeitis and syphilis, but is not always present in hepatic disease of not definitely progressive phase, as cirrhosis, and carcinoma. They assume that the finding of quinin-resistant lipase in the blood of patients with healthy kidneys indicates a recent destructive process in the parenchyma of the liver.

Hemolytic Jaundice Versus Pernicious Anemia.—Maas reports the case of a woman, aged 47, observed for the first time in September, 1920, and still presenting difficulties in differential diagnosis after repeated observation and treatment for over four years. Definite symptoms of pernicious anemia are complicated by a general aspect and course unknown in pernicious anemia. Maas says that the subjective improvement after the several blood transfusions may be due partly to suggestion and partly to the enforced rest. The patient, in spite of her condition, retains a good working capacity, and refuses splenectomy, tentatively proposed.

Cancer of the Thyroid.—Breitner and Just state that metastasis without other signs of malignancy is peculiar to thyroid cancer. Their research covers 103 cases. The carcinoma seemed to be primary in 24 per cent. of the 41 men and 20 per cent. of the 62 women. In 23 men and 45 women an existing goiter more or less suddenly showed signs of malignant degeneration. Of the signs of malignant disease, rapid growth is the most important, although difficulty in breathing occurs more frequently; sudden hoarseness in a goiter patient is a grave sign, as also difficulty in swallowing. Loss of weight had been observed by 20 of the patients. Of the 28 men and 44 women, surgically treated, 7 were living a year after the operation; 26 had died, and information was lacking on the other 39. Roentgenotherapy was applied in 20 cases, before or after surgical intervention; with very favorable results after the systematic application of small irradiation doses in the carcinoma cases in which a radical operation had been performed, but with poor results in the sarcoma cases. Of these 20, the sarcoma patients survived from six weeks to four months, the carcinoma patients from three months to twelve years. Breitner and Just caution against exploratory excisions on account of the dangers of hemorrhage and of extension of the process.

Monatsschrift für Geb. und Gynäkologie, Berlin

68: 1-74 (Dec.) 1924

Determination of Sex. A. Bayer.—p. 1.
Immediate Suture of Perineal Tears. H. Offergeld.—p. 17.
Psychosis from Metastatic Meningitis with Abscess in Parametrium. G. H. Schneider.—p. 29.
Sedimentation Speed in Relation to Uterine Cancer. E. Eick.—p. 32.
*Injury of Fetus by Roentgenotherapy. H. Naujoks.—p. 40.

Injury of Fetus from Preventive Roentgen-Ray Exposures.—Ovariectomy for cancer in September, 1921, was followed by a sarcoma dose irradiation in October, with two further preventive exposures in the next four months. Soon afterward the patient was found to be pregnant, and normal delivery occurred in August, 1922. At the age of 2, the child is a dwarf idiot, with microcephaly, while an older brother and a 3 months old child are normal and robust. Naujoks believes that this instance of evident injury from roentgen exposures, together with the other cases in the literature, justifies induction of abortion in all cases in which the uterus is known to have been exposed to considerable irradiation early in the pregnancy.

Münchener medizinische Wochenschrift, Munich

71: 1781-1814 (Dec. 19) 1924

*Encephalitis and Syphilis of Rabbits. Plaut et al.—p. 1781.
*Chemical Test Differentiating Sex. E. O. Manoiloff.—p. 1784.
*Heredity in Goiter. H. W. Siemens.—p. 1789.
Mass Treatment of Goiter. Lill.—p. 1791. Comment. E. Seifert.—p. 1792.
Colloid Reactions. O. Rehm.—p. 1793.
*Proteus X 19 Agglutination. C. Sonnenschein.—p. 1795.
*Duration of Pregnancy. Rissmann.—p. 1797.
Thermocautery Treatment of Hemorrhoids. A. Schüle.—p. 1799.
*Shock Treatment. R. Deutschmann.—p. 1799.
How Much Should the Patient Be Told? Müller de la Fuente.—p. 1800.
*Flatulent Dyspepsia. F. Crämer.—p. 1801.
Productive Welfare Work. C. Levi.—p. 1803.

Encephalitis and Syphilis of Rabbits.—Plaut, Mulzer and Neubürger, while claiming that there is an encephalitis of rabbits caused by *Spirochaeta pallida* conclude from their further investigations that it is doubtful whether the "paralysis encephalitis" of rabbits is caused by spirochetes. It is probable that the virus, which is different from *Encephalitozoon cuniculi*, was present in the brains of the paralytics, which they used for inoculation in the animals.

Chemical Test Differentiating Sex.—Manoiloff describes a complicated chemical test for differentiation of male and female blood. The method also determined the sex in plants when chlorophyll or other extracts were used. It seemed that the female fluids contained a dialyzable substance which prevented the reduction of a dye to a leukobase.

Heredity in Goiter.—Siemens discusses the literature on heredity of goiter. The instances which have been published so far show the heredity as dominant, and linked to the female sex. Investigations on univitelline twins showed also the hereditary predisposition.

Proteus X 19 Agglutination.—Sonnenschein confirms the serologic difference between common proteus strains and Weil's *Proteus* X 19 and OX 19. He also confirms the observation that immunization of a rabbit with these latter strains produces only heat-stable agglutinins. He was however able to obtain in a man thermolabile agglutinins for both the latter types after immunization with an OX 19 vaccine. The serum behaved, even in this respect, exactly like the serum of a natural infection with typhus.

Duration of Pregnancy and Development of Child.—Rissmann concludes from his twenty-six years of experience that mature babies (born at least 280 days after the last menstruation, or at least 270 days after conception) are at least 50 cm. long, weigh at least 3,000 gm., and have a circumference of the head of at least 33 cm. A tape measure is unsuitable. A solid board with an engraved correct measure is required. With regard to Heyn's paper (abstracted in these columns, Dec. 6, 1924, p. 1885) he denies the possibility of a mature baby after a pregnancy of 230 days. He points out that the woman involved did not make the statement as to the date of the coitus until in court, and he criticizes the findings at the repeated examinations during pregnancy, which also speak for an earlier date. Besides this, he finds that even if such cases should really occur as frequently as once in 500 years, the court should not heed them, having to deal only with probabilities.

Parenteral Protein Therapy.—Deutschmann claims priority in having recommended nonspecific protein therapy in 1907. He pointed out in his work that the serum from horses treated with yeast does not act as an antitoxin, but stimulates the cells to better action.

Flatulent Dyspepsia.—Crämer observed flatulent dyspepsia only among "white-collar men." Abuse of tobacco, too much food, and lack of exercise may be causal factors; 50 per cent. of such patients have no free acid in the stomach. He notes the discrepancy between the meteorism and the small amounts of flatus. The stools may be normal. The diaphragm is high, and there is dulness on the left side of the abdomen. The difference of pitch of the percussion sound on the two sides is great—about an octave. The dulness disappears after massage. The treatment consists in forbidding whole-grain bread, fruits, cheese, cucumbers and any other foods which the patient finds flatulence inducing. Charcoal and carminatives are indicated, sometimes also belladonna. Massage by hand or vibrator, the faradic current, and exercise improve the condition.

Wiener klinische Wochenschrift, Vienna

37: 1301-1322 (Dec. 18) 1924

*Biliary Affections in Children. H. Abels.—p. 1301.
*Multiple Ulcers of the Duodenum. R. Kraft.—p. 1304.
Irregular Bradycardia. J. T. Peters.—p. 1307.
Barium Poisoning. A. Lorenz.—p. 1310.
*Gonococcal Arthritis in the New-Born. O. Pritzi.—p. 1312.
"Pulmonary Tuberculosis." H. Maendl.—p. 1313.
"Ciliary Depression." R. Krämer.—p. 1315.
"Nervous Indigestion." W. Neutra.—p. 1315.
Pharmacology of Puerperal Fever. H. Thaler. Supplement, pp. 1-23.

Biliary Affections in Children.—Abels found an affection of the biliary passages quite frequently as the base of umbilical colics. Most of his young gallstone patients could trace their symptoms back to childhood. The majority in this group are stout girls, and heredity is clear in practically every case. Lowered appetite, constipation and intestinal fermentation are common. He determines the position of the gallbladder by percussion, presses deeply at a point situated a few centimeters distad, and tells the child to take a deep breath. The descending inflamed gallbladder is tender, and a defensive stiffening of the right rectus muscle may be felt. In most cases Boas' point to the right of the tenth and eleventh dorsal spinous process is tender. The liver is frequently enlarged. Many children operated on under the diagnosis of chronic appendicitis have cholecystitis. Their susceptibility to other infections (pyelocystitis, otitis) and to migraine is striking. He recommends vigorous treatment of the constipation and fermentation, Carlsbad salts and a strict diet.

Multiple Ulcers of the Duodenum.—Kraft reviewed the material of Haberer's clinic for recurrences of ulcers after resection according to Billroth I. It occurred in four out of 531 cases. He believes that some of them are not real recurrences: the ulcer might have been overlooked during the operation. Multiple ulcers are quite frequent and careful examination of the duodenum is necessary.

Gonococcus Arthritis in the New-Born.—Pritzi observed a case of gonococcal arthritis in a female infant of 10 days, who had developed conjunctivitis three days before. A gonococcal vulvitis appeared a week later.

Zeitschrift für Tuberkulose, Leipzig

41: 161-224 (Nov.) 1924

Cavity in Pulmonary Tuberculosis. Bacmeister and Piesbergen.—p. 161.
*Tuberculosis Immunity. II. Arima, Aoyama and Ohnawa.—p. 165.
Elimination of Tubercle Bacilli in Bile. Koizumi.—p. 173.
*Developmental Diagnosis of Pulmonary Tuberculosis. H. v. Hayek.—p. 185.
Fornet's Test Emulsion for Diagnosis of Tuberculosis. Bignami.—p. 194.
"Tuberculosis in Penal Institutions." H. Thiele.—p. 197.

Tuberculosis Immunity.—THE JOURNAL summarized, June 28, 1924, p. 2148, Arima, Aoyama and Ohnawa's statements in regard to cultivation of human tubercle bacilli that lost their acid-fast property on a saponin-containing medium. They now report research on the virulence of these cultures; 1 mg. or less caused no visible pathologic changes in rabbits (injected intravenously) or in guinea-pigs (subcutaneously). The saponin cultures had much less than a thousandth part of the virulence of the glycerin-agar culture of the same strain, both in regard to local reaction and ability to invade the whole body. They add that the bacilli do not lose their alcohol-fast property on the saponin medium, as they had assumed at first.

Developmental Diagnosis in Pulmonary Tuberculosis.—Von Hayek states that study of the changes in the local processes of the disease and of the nature of the foci is never a sufficient basis for prognosis and treatment. Determination of the relation between the resistance of the entire organism and the local processes, however, is authoritative. A developmental diagnosis, *Entwicklungsdiagnose*, based on long, continuous, systematic observation and critical synthesis of all the phenomena should be the aim.

Zentralblatt für innere Medizin, Leipzig

45: 1065-1080 (Dec. 20) 1924

*Polyneuritis After Jaundice. E. Cornils.—p. 1065.

Polyneuritis After Jaundice.—Cornils' patient was a woman, 46 years of age, given operative treatment because of aseptic occlusion of the common bile duct by a gallstone, with jaundice of two months' duration. Signs of cholemia set in, and in a few days a universal polyneuritis developed. The patient was regarded as moribund, but she recovered after transfusion of a liter of blood as the last resort. The neuritis lasted for more than a year longer.

Casopis lekaruv ceskych, Prague

63: 1813-1852 (Dec. 13) 1924

*Auscultation in Aortitis. J. Brumlik.—p. 1813. Conc'n.—p. 1878.
*Intrathoracic Goiter. V. Maydl.—p. 1817. Conc'n.—p. 1883.
*Syphilitic Cervical Spondylitis. M. Havránek.—p. 1820.
*Extra-Uterine Pregnancy. J. Tkadlecek.—p. 1825. Conc'n.
*Serodiagnosis of Tuberculosis. J. Kabelik and G. Gellner.—p. 1827.

Auscultation in Aortitis.—Brumlik finds in some cases of arteriosclerosis or syphilis of the aorta, a displacement of the aorta toward the left side. This, as well as a dilatation, may cause an accentuation of the second sound, heard on the left side in the same or greater intensity than on the right side. If the character of the sound is equal on both sides (in spite of a difference in strength), the sound originates in the aorta. The second sound from the pulmonary artery is never transmitted to the right side. Both second sounds may be accentuated, but in this case their character differs.

Accentuation is distinctly heard through the stethoscope. Finer changes of the sounds can be distinguished only by direct ear-to-chest auscultation.

Intrathoracic Goiter.—Maydl reports mediastinotomy in two patients with intrathoracic goiter.

Syphilitic Cervical Spondylitis.—Havránek reports the history of two cases of syphilitic cervical spondylitis in young women. The neck, the last dorsal and first lumbar vertebrae are predilection points for a syphilitic spondylitis.

Extra-Uterine Pregnancy.—Tkadlecek recommends injections of milk, when the diagnosis is doubtful in patients who can be kept under observation for a few days. Inflammatory tumors of the adnexa diminish in size, while the tumor remains unchanged, or increases in size, in case of an extra-uterine pregnancy.

Serodiagnosis of Tuberculosis.—Kabelík and Gellner publish details of their active modification of complement fixation in tuberculosis.

63: 1853-1921 (Dec. 22) 1924

Tribute to O. Srdinko. Z. Frankenberger.—p. 1853.
*Esophageal Registration of the Heart. Seemann and Smilauerová.—p. 1858.
*Surgical Shock. V. Kálalová.—p. 1867.
*Action of Insulin. V. Laufberger.—p. 1886.
*Blood Pressure in Tuberculosis. V. Sichan.—p. 1892.
Humoral Sterilization. F. Karásek.—p. 1894.
Pathogenesis of Gout J. Paroulek.—p. 1895. Conc'n.

Esophageal Registration of the Heart.—Seemann and Smilauerová publish their method of optic registration of the movements of the left auricle from the esophagus. The analysis of the curves of differential pressure revealed the presence of two new waves.

Surgical Shock.—Kálalová examined systematically the blood, the blood pressure, pulse, temperature and general condition of patients during the first hours after the operation. The changes of the leukocytes reach their maximum in three to six hours, and may be due to resorption of proteins from the wound. Yet the blood pressure shows no parallels with the blood picture. Her attempts to desensitize the patients by injections of their own blood or milk failed. She concludes that the resorption of proteins from the wound cannot be an important cause of the shock, unless the anesthesia and hemorrhage increase the susceptibility of the organism.

Action of Insulin.—Laufberger believes that insulin blocks the formation of carbohydrates from other substances, but not necessarily the formation of glycogen from glucose. Its normal biologic significance is the inhibition of cleavage of other reserves of the organism after ingestion of carbohydrates. He proved by a simple reckoning, that the supply of glycogen and glucose present in a fasting rabbit must be exhausted by its normal metabolism in about the same time as the animal would be killed by insulin. Consequently the main issue is not the increased cleavage or oxidation of glucose, but the deficient endogenous supply of carbohydrates after injection of insulin. Lowering of the liver glycogen by muscular exertion or increased heat production (guinea-pigs kept in cold) is followed by death of the animals from otherwise sublethal doses of insulin. Frogs, whose metabolism increases with the temperature of the surroundings, are less refractory to insulin if kept in a warm room. The increase in lactic acid in the blood observed after insulin injections is due only to muscular exertion. He found that dioxyacetone counteracts the insulin poisoning as well as glucose. Various possible sources of glucose (proteins, alanin, high fatty acids, lactic acid, etc.) did not prevent the death of the animals after insulin injections.

Blood Pressure in Tuberculosis.—Sichan determined the blood pressure in 466 tuberculous women. The pressure tends to decrease in prognostically bad cases, and increases in favorable cases. There are, however, exceptions. He discusses the possible causes of the changes. Symptoms of abnormal function of ovaries are quite common, and may account for some changes of the vasomotors. Psychic influences, especially worries, should not be underestimated.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

2: 2815-2962 (Dec. 6) 1924

*Møllgaard's Treatment of Tuberculosis. I. Snapper.—p. 2816.
Torsion of Normal Fallopian Tube. P. R. Michael.—p. 2828.
Pathology of Cataract. J. A. Roorda Smit.—p. 2835.
The Myodiopter. H. J. Flieringa.—p. 2839.
Plasma-Cell Conjunctivitis. Go Ing Horn and Halbertsma.—p. 2843.
*Diabetic Xanthoma. Van Vloten.—p. 2846.
Recent Research on Cerebellum Function. G. van Rijnberk.—p. 2850.
Van Deventer Bicentennial. J. G. de Lint.—p. 2870.
Dysentery in Antiquity. E. D. Baumann.—p. 2878.
Third Session of Health Board of League of Nations. Jitta.—p. 2917.

The Møllgaard Treatment of Tuberculosis.—Snapper reports his impressions from a trip to Copenhagen to study the gold treatment and its effects. He emphasizes its dangers, saying that the antitoxin given with the drug, to protect against the tuberculin shock from the destruction of the tubercle bacilli, is not always a complete protection. The antitoxin acts only on the toxin released by the destruction of the bacilli, but there are other substances released, and these are not always biologically harmless. Deaths occur under the treatment, even in mild cases and with the present experience. Møllgaard compares the treatment to a grave major operation; the fact that there is a certain mortality with such operations does not deter patients from taking the risk. Snapper states that the crucial test, the cure of tuberculous guinea-pigs, has not yet been definitely established, because the sanocrysin injures the kidneys of guinea-pigs so that they are unable to stand more than 30 mg. per kilogram—below the effectual dose. Calves tolerate 50-100 mg. and mice, 120. One point established is that the focal reaction to the sanocrysin is so severe that the bacilli in the foci are mostly killed, and there is no spreading of the infection, but inoculation of guinea-pigs usually shows a few surviving bacilli. The aim in this treatment is to act on the focus. Surgical tuberculosis and the cirrhotic forms of pulmonary tuberculosis show little effect, and the reaction is too severe to be applied to the eye, but Rovsing has reported good results in local treatment of tuberculous cystitis in five cases.

Diabetic Xanthoma.—Van Vloten calls attention to the benefit from insulin treatment in a case of almost universal xanthoma in a diabetic man. The cholesterol content of the blood also declined.

2: 2963-3106 (Dec. 13) 1924

The Tijdschrift. G. van Rijnberk.—p. 2964. Cont'n.
Mechanism of Malformations of Female Genitals. Mijnberg.—p. 2967.
*Cause of Gallstone Formation. H. Toxopeus.—p. 2989.
*Pseudocholelithiasis. L. Schaap.—p. 2991.
Cleansing of Slides, etc. G. C. van Walsem.—p. 2997.
Ointment Treatment of Gonococcus Dacryocystitis. Roelofs.—p. 3000.
Scythe Injury of the Axilla. Van Dam and Melchior.—p. 3004.
Case of Acute Diabetic Coma. A. Foyer.—p. 3008.
A 322 Days Pregnancy. C. L. Alons.—p. 3011.
Suspension Stability of Citrated Blood. J. Pinkhof.—p. 3012.
Tuberculosis in the Netherlands Army. J. A. Putto.—p. 3042.

Cause of Gallstones.—Toxopeus presents arguments to show that the old saying as to lack of exercise being the main factor of gallstone formation is true, but, he adds, it is lack of exercise of the diaphragm. The liver sucks up blood like a sponge, and the diaphragm presses the fluid out, as a hand squeezes a sponge. All conditions known to favor production of gallstones have the feature in common that the excursions of the diaphragm are hampered.

Pseudocholelithiasis.—A chronic typhoid cholecystitis explained the supposed gallstone colics in one of Schaap's cases; there had been no disturbances from the typhoid infection for thirty years after the primary typhoid; then typhoid bacilli were found in the stools. He declares that gallstone colics without gallstones are more common than generally realized, and that there are no nonsurgical means for differentiation. In another case there was a history of pains in the rectum at times since the age of 16, and pains suggesting kidney calculi colics at the age of 38. At 41, extremely severe colics were interpreted as gallstone colics; there was much urobilin in the urine, slight jaundice, and three units of bilirubin in the blood serum by the direct reaction. Surgical exploration revealed as the only pathologic finding, relics of a small old inflammatory process in the hepatoduodenal ligament. After a few recurring colics, the first two weeks, recovery was complete and has persisted to date.